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AIREDALE
air conditioning for every environment

INSTALLATION, OPERATING & MAINTENANCE MANUAL

Ultima Compact
Air Cooled Liquid Chiller
30kW - 450kW

BSI UKAS ENVIRONMENTAL MANAGEMENT 003
ISO 14001
EMS52086

BSI UKAS QUALITY MANAGEMENT 003
ISO 9001
FM00542

About Airedale Products & Customer Services

WARRANTY, COMMISSIONING & MAINTENANCE

The equipment carries Airedale's standard **Parts** (non consumable) **& Labour** warranty for a period of **12 months** from the date of commissioning or **18 months** from the date of despatch, which ever is the sooner. (Excludes the cost of any specialist access or lifting equipment.) Commissioning will be carried out by Airedale International Air Conditioning Ltd or an approved Airedale commissioning company.

To further protect your investment in Airedale products, we have introduced Airedale Service, who can provide full commissioning services, comprehensive maintenance packages and service cover 24 hours a day, 365 days a year (UK mainland). For a free quotation contact our Airedale Service or your local Sales Engineer.

All Airedale products are designed in accordance with EU Directives regarding prevention of build up of water, associated with the risk of contaminants such as Legionella.

Where applicable, effective removal of condensate is achieved by gradient drainage to outlets and where used, humidification systems produce sterile, non-toxic steam during normal operation.

For effective prevention of such risk it is necessary that the equipment is maintained in accordance with Airedale recommendations.

CAUTION **Warranty cover is not a substitute for Maintenance. Warranty cover is conditional to maintenance being carried out in accordance with the recommendations provided during the warranty period. Failure to have the maintenance procedures carried out will invalidate the warranty and any liabilities by Airedale International Air Conditioning Ltd.**

SPARES

A spares list for 1, 3 and 5 years will be supplied with every unit and is also available from our Spares department on request.

TRAINING

As well as our comprehensive range of products, Airedale offers a modular range of Refrigeration and Air Conditioning Training courses, for further information please contact Airedale.

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CUSTOMER SERVICES

For further assistance, please e-mail: ***enquiries@airedale.com*** or telephone:

UK Sales Enquiries	+ 44 (0) 113 238 7789	***uk.sales@airedale.com***
International Enquiries	+ 44 (0) 113 239 1000	***enquiries@airedale.com***
Spares Hot Line	+ 44 (0) 113 238 7878	***spares@airedale.com***
Airedale Service	+ 44 (0) 113 239 1000	***service@airedale.com***
Technical Support	+ 44 (0) 113 239 1000	***tech.support@airedale.com***
Training Enquiries	+ 44 (0) 113 239 1000	***marketing@airedale.com***

For information, visit us at our Web Site: ***www.airedale.com***

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General Statement

IMPORTANT The information contained in this manual is critical to the correct operation and maintenance of the unit and should be read by all persons responsible for the installation, commissioning and maintenance of this Airedale unit.

SAFETY The equipment has been designed and manufactured to meet international safety standards but, like any mechanical/electrical equipment, care must be taken if you are to obtain the best results.

CAUTION **1 Service and maintenance of Airedale equipment should only be carried out by Technically trained competent personnel.**

CAUTION **2 When working with any air conditioning units ensure that the electrical isolator is switched off prior to servicing or repair work and that there is no power to any part of the equipment.**

3 Also ensure that there are no other power feeds to the unit such as fire alarm circuits, BMS circuits etc

4 Electrical installation commissioning and maintenance work on this equipment should be undertaken by competent and trained personnel in accordance with local relevant standards and codes of practice.

5 Refrigerant used in this range of products is classified under the COSHH regulations as an irritant, with set Occupational Exposure Levels (OEL) for consideration if this plant is installed in confined or poorly ventilated areas.

6 A full hazard data sheet in accordance with COSHH regulations is available should this be required.

Warranty

GENERAL

To be read in conjunction with Airedale International Air Conditioning Ltd standard Conditions of Sale and any related quotation.

The equipment carries Airedale's standard **Parts** (non consumable) **& Labour** warranty for a period of **12 months** from the date of commissioning or **18 months** from the date of despatch, which ever is the sooner. Commissioning must be carried out by Airedale or an approved Airedale company.

WARRANTY IS ONLY VALID IN THE EVENT THAT:

1 In the period between delivery and commissioning the equipment:
   - o is properly protected & serviced
   - o water flow safety devices are in place and fully operational

2 The equipment is serviced & maintained by Airedale or an approved Airedale company in accordance with the Installation & Maintenance manual provided, during the Warranty Period.

In the event of a problem being reported, Airedale will cover the full cost of rectification (excluding costs for any specialist access or lifting equipment) if warranty is valid under these conditions.

Any spare part supplied by Airedale under the warranty shall be warranted for the unexpired period of the warranty or 3 months from delivery whichever period is the longer, with the exception of compressors on which a further 12 months warranty is granted.

PROCEDURE

- The on site contractor or service company place an official order on Airedale for the replacement part including site labour if required. Airedale will acknowledge this order with detailed prices for components, travel and labour rates.
- Should warranty be accepted, following inspection of the faulty component, a credit note will be issued against the invoice raised in line with the acknowledgement.
- Should warranty be refused the invoice raised against the acknowledgement becomes payable on normal terms.
- Airedale reserves the right to carry out site warranty labour work using their own direct labour or by sub contracting to an approved company of their choice.

EXCLUSIONS

Warranty may be refused for the following reasons:

- Misapplication of product or component.
- Incorrect site installation.
- Incomplete commissioning documentation.
- Inadequate site installation.
- Inadequate site maintenance.
- Damage caused by mishandling.
- Replaced part being returned damaged without explanation.
- Unnecessary delays incurred in return of defective component.

GENERAL

Dead on arrival or manufacturing defects are the responsibility of Airedale and should be reported immediately.

In the event of a warranty failure, dead on arrival or manufacturing defect, the Airedale Service department should be contacted and on receipt of an order, an Airedale engineer (or representative) will be directed to site as soon as possible.

RETURNS ANALYSIS

All faulty components returned under warranty are analysed on a monthly basis as a means of verifying component and product reliability as well as supplier performance. It is important that all component failures are reported correctly.

General Description

UNIT IDENTIFICATION

AIR COOLED LIQUID CHILLER	
UCC	**Ultima Compact Chiller - Cooling Only**
30 - 450	Model Size (Expressed as Nominal Cooling in kW)
SQ-	**S**ingle Circuit - **Q**uiet Chiller (Models 30-80 (Except 75) Only)
SSQ-	**S**ingle Circuit - **S**uper **Q**uiet Chiller (Models 30-80 (Except 75) Only)
D-	**D**ouble Circuit - Standard Chiller
DQ-	**D**ouble Circuit - **Q**uiet Chiller
DSQ-	**D**ouble Circuit - **S**uper **Q**uiet Chiller
2-16	Number of Fans
/1 or /2	Single or Double Row of Fans
Example	**UCC250DQ-8/2**

INTRODUCTION

The Airedale range of Ultima Compact air cooled liquid chillers covers the nominal capacity range 30kW to 450kW in 23 model sizes. The range is available with many optional variations including **Q**uiet and **S**uper **Q**uiet sound level variants.

Attention has been placed on maximising the unit's performance while keeping the sound and vibration levels and footprint to an absolute minimum.

CE DIRECTIVE CE

Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC)	**89/336/EEC**
Low Voltage Directive (LVD)	**73/23/EEC**
Machinery Directive (MD)	**89/392/EEC in the version 98/37/EC**
Pressure Equipment Directive (PED)	**97/23/EC**

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

REFRIGERANTS

The range has been designed and optimised for operation with the ozone benign R407C refrigerant.

FEATURES	UCC30, UCC40, UCC50, UCC60, UCC70 & UCC80	UCC75, UCC100, UCC125 & UCC150	UCC110, UCC130, UCC160 & UCC180	UCC200, UCC225 & UCC250	UCC275, UCC300, UCC330, UCC360, UCC400 & UCC450
Construction					
4 x eye bolts to BS4278 or Integrated lugs/Mounting feet	Integrated lugs	Lifting Eye Bolts	Lifting Eye Bolts	Lifting Eye Bolts	Lifting Eye Bolts
Acoustically lined compressor enclosure	SSQ/DSQ Models	DSQ Models	DSQ Models	DSQ Models	DSQ Models
Refrigeration					
Full Operating Charge of R407C	Std	Std	Std	Std	Std
Number of Independent Refrigeration Circuits	1 or 2	2	2	2	2
Scroll Compressor Arrangement	1 x Tandem Set *or* 2 x Single	2 x Tandem Sets	2 x Tandem Sets	2 x Tandem Sets	2 x Tandem Sets (UCC275-300) 2 x Trio Sets (UCC330-450)
Plate Evaporator	Std	Std	Std	Std	Std
Enhanced Refrigeration Condenser Coils	SSQ/DSQ Models	DSQ Models	DSQ Models	DSQ Models	DSQ Models
Sickle Bladed Fans	-	Long Bellmouth	Long Bellmouth	Long Bellmouth	Long Bellmouth
Low speed condenser fan	SQ/DQ Models	DQ Models	DQ Models	DQ Models	DQ Models
Extra Low speed condenser fan	SSQ/DSQ Models	DSQ Models	DSQ Models	DSQ Models	DSQ Models
Thermostatic Expansion valve & Liquid line solenoid valve	Std	Std	Std	Std	-
Electronic Expansion Valve	Opt (SQ/DQ Models) Opt (SSQ/DSQ Models)	DQ/DSQ Models Opt (D Models)	DQ/DSQ Models Opt (D Models)	DQ/DSQ Models Opt (D Models)	Std
Water Inlet/Outlet	Threaded BSP female	Flanged PN16	Flanged PN16	Flanged PN16	Flanged PN16
Liquid line sight glass	Std	Std	Std	Std	Std
Liquid and Discharge line ball valve	Opt	Std	Std	Std	Std
Large capacity filter drier	Fixed Cores	Replaceable Cores	Replaceable Cores	Replaceable Cores	Replaceable Cores
Manual reset HP/LP Switch (LP via microprocessor)	Std	Std	Std	Std	Std
Suction and liquid pressure transducers	Std	Std	Std	Std	Std
Compressor minimum differential pressure protection	Std	Std	Std	Std	Std
Pressure relief valve, integral rupture disc & gauge	Std	Std	Std	Std	Std
Electrical					
AireTronix Microprocessor Controller	Std	Std	Std	Std	Std
Modulating Head Pressure Control	Std	Std	Std	Std	Std
Emergency stop	-	Std	Std	Std	Std
Individual door isolated mains power compartments for each refrigeration CCT, fans & pump option	-	-	Std	Std	Std
Dedicated bus-bar chamber for incoming 3-phase & earth mains power supply (no neutral required)	-	-	Std	Std	Std
Evaporator Pad Heater	Std	Std	Std	Std	Std
Trace Heating to Internal Pipework	Std	Std	Std	Std	Std
Connections for External Trace Heating	Std	Std	Std	Std	Std
Phase Rotation Protection	Opt	Opt	Opt	Std	Opt
Power Factor Correction	-	Opt	Opt	Opt	Opt

General Description

STANDARD FEATURES

Controls

As standard, the AIRETronix microprocessor controller can provide 2, 4 or 6 stages of capacity control, dependent upon model type.

Optionally, the controller is designed to provide capabilities for;

- Building Management Systems
- Networking
- Sequencing (Master/Slave and Run/Standby)

to meet all your system requirements, please confirm at time of order.

Unit initial set up details can be found in the ***Controls*** section.

CAUTION **When adding to an existing network, please consult Airedale to ensure strategy compatibility.**

Electrical

Dedicated weatherproof electrical power and controls panels are situated at the end of the unit and contain:

- Separate, fully accessible, controls compartment, allowing adjustment of control set points whilst the unit is operational
- Circuit breakers for protection of all major unit components
- Separate, permanent supply for controls/trace heating, 230V/50Hz/1ph

The electrical power and control panel is wired to the latest European standards and codes of practice.

UCC75, 100-450

Mains supply is 3 phase and a neutral is not required. Refer to ***Interconnecting Wiring***.

OPTIONAL EXTRAS – ENERGY SAVING

Power Factor Correction

When applied to the motors of each compressor, the compressor power factor is controlled to a minimum operating value of 0.95 at the full operating capacity. This satisfies many supply authorities that may impose surcharges on equipment with power factor less than 0.95.

Electronic Expansion Valves

Electronic expansion valves differ to the normal thermostatic expansion valves in their ability to maintain control of the suction superheat at reduced head pressures. This can lead to significant energy savings particularly at minimum loading and low ambient temperatures. Factory fitted, for full details refer to the **Technical Manual**.

OPTIONAL EXTRAS – GENERAL

Loose Item

- Anti Vibration Mounts
- Condenser Fan Discharge Air Plenum Extension

} Instructions supplied with item

Factory Fitted

Electronic Expansion Valves (UCC30 – UCC80 & UCC75D – UCC250D Models only (Standard to all other models)

- Epoxy Coated Condenser Coils
- Coil Guards
- Sequence Control

CAUTION **It is only possible to set up sequencing following completion of interconnecting communication wiring. Airedale Service can arrange Sequence setup on request.**

- Power Factor Correction
- BMS Interface Card
- Dual Pressure Relief Valve
- Leak Detection Kit
- Electronic Soft Start
- Flow Switch
- Flushing Bypass
- Water Filter
- Integral Pump Packages including Flushing Bypass Kit
- Differential Pressure Switch
- Remote Setpoint Adjust
- Mini Pressurisation Package
- Buffer Tank & Expansion Vessel
- Alternative Refrigerant (Outside EU)

OPTIONAL UNIT COVER

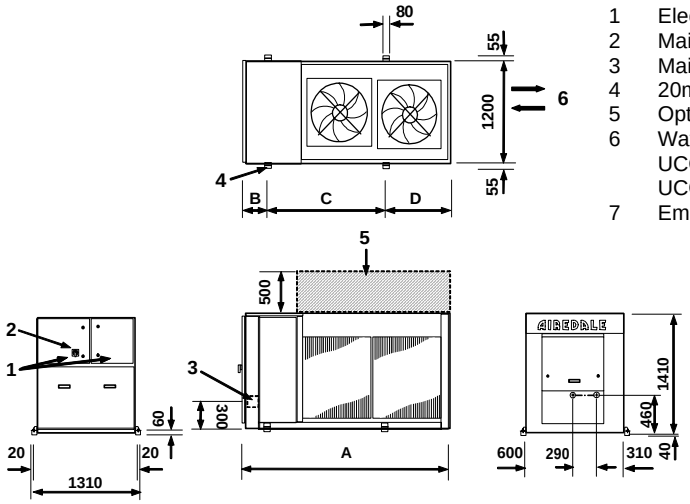
- Commissioning
- Chillerguard® Maintenance

} For details and a competitive quotation, contact Airedale Service.

Installation Data

DIMENSIONS **SINGLE ROW FANS - /1**

UCC30 - UCC80
(Except UCC75)



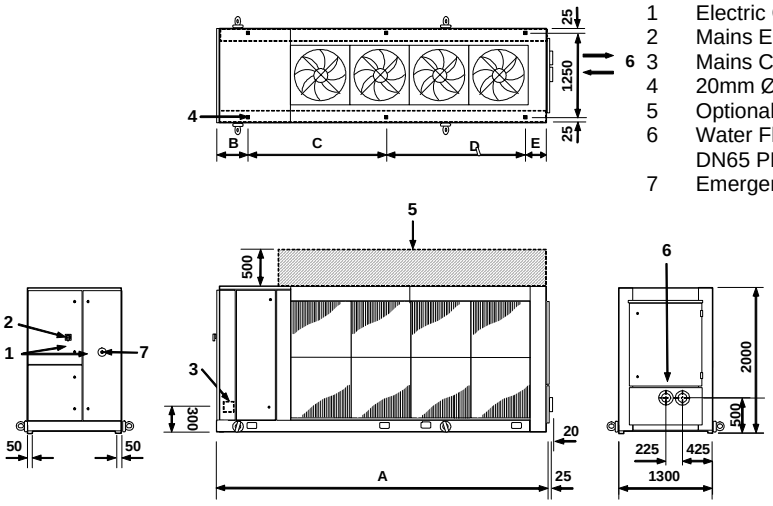
1 Electric Control Panels
2 Mains Electric Isolators
3 Mains Cable Entry
4 20mm Ø Mounting Holes
5 Optional Plenum Extension
6 Water Connections:
UCC30-40 - 1 1/2”
UCC50-80 (Ex 75) - 2”
7 Emergency Stop

Model SQ/DQ		A(1)	B	C	D
UCC30 – UCC40 SQ/DQ	mm	1650 (2500)	300	1050	300
UCC50 – UCC70 SQ/DQ	mm	2500	300	1450	750
UCC80 SQ/DQ	mm	2500	300	1450	750

Model SSQ/DSQ		A(1)	B	C	D
UCC30 - UCC40 SSQ/DSQ	mm	1650 (2500)	300	1050	300
UCC50 - UCC70 SSQ/DSQ	mm	2500	300	1450	750
UCC80 SSQ/DSQ	mm	2500	300	1450	750

(1) Figures in brackets apply when optional Buffer Tank option fitted.

UCC75 - UCC150
(Except UCC80)



1 Electric Control Panels
2 Mains Electric Isolators
3 Mains Cable Entry
4 20mm Ø Mounting Holes
5 Optional Plenum Extension
6 Water Flange Connections:
DN65 PN16
7 Emergency Stop

Model D		A	B	C	D	E
UCC75D	mm	2775	390	1900	(2)	485
UCC100D	mm	2775	390	1900	(2)	485
UCC125 - UCC150D	mm	3625	390	1825	1135	275

Model DQ		A	B	C	D	E
UCC75DQ	mm	2775	390	1900	(2)	485
UCC100 - UCC125DQ	mm	3625	390	1825	1135	275
UCC150DQ	mm	4475	390	1900	1900	285

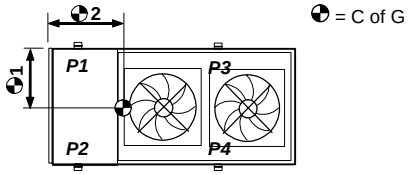
Model DSQ		A	B	C	D	E
UCC75DSQ	mm	2775	390	1900	(2)	485
UCC100DSQ	mm	3625	390	1825	1135	275
UCC125- UCC150DSQ	mm	4475	390	1900	1900	285

Installation Data

POINT LOADINGS, WEIGHTS & CENTRE OF GRAVITY (C OF G)

SINGLE ROW FANS - /1

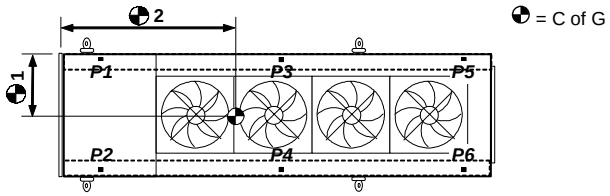
UCC30 - UCC80 (Except UCC75)



Model SQ/DQ		P1	P2	P3	P4	(1)	(1)	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC30 SQ/DQ-1/1	kg	125	125	125	125			500	600	825
UCC40 SQ/DQ-1/1	kg	150	150	140	140			580	600	800
UCC50 SQ/DQ-2/1	kg	180	180	185	185			730	600	1040
UCC60 SQ/DQ-2/1	kg	190	190	200	200			780	600	1040
UCC70 SQ/DQ-2/1	kg	195	195	205	205			800	600	1040
UCC80 SQ/DQ-2/1	kg	215	215	230	230			890	600	1040

Model SSQ/DSQ		P1	P2	P3	P4	(1)	(1)	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC30 SSQ/DSQ-1/1	kg	125	125	125	125			500	600	825
UCC40 SSQ/DSQ-1/1	kg	155	155	145	145			600	600	800
UCC50 SSQ/DSQ-2/1	kg	185	185	185	185			740	600	1040
UCC60 SSQ/DSQ-2/1	kg	195	195	200	200			790	600	1040
UCC70 SSQ/DSQ-2/1	kg	195	195	210	210			810	600	1040
UCC80 SSQ/DSQ-2/1	kg	225	225	240	240			930	600	1040

UCC75 - UCC150 (Except UCC80)



Model D		P1	P2	P3	P4	P5	P6	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC75D-2/1	kg	320	320	(1)	(1)	160	160	960	665	845
UCC100D-2/1	kg	345	345	(1)	(1)	175	175	1040	665	860
UCC125D-3/1	kg	315	295	140	130	190	190	1260	665	1380
UCC150D-3/1	kg	330	330	155	155	205	205	1380	665	1370

Model DQ		P1	P2	P3	P4	P5	P6	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC75DQ-2/1	kg	330	330	(1)	(1)	170	170	1000	665	845
UCC100DQ-3/1	kg	285	285	135	135	175	175	1190	665	1365
UCC125DQ-3/1	kg	320	300	155	145	200	200	1320	665	1385
UCC150DQ-4/1	kg	340	340	195	195	250	250	1570	665	1590

Model DSQ		P1	P2	P3	P4	P5	P6	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC75DSQ-2/1	kg	345	345	(1)	(1)	165	165	1020	665	845
UCC100DSQ-3/1	kg	300	300	130	130	175	175	1210	665	1365
UCC125DSQ-4/1	kg	340	320	200	190	250	240	1540	665	1575
UCC150DSQ-4/1	kg	355	355	215	215	270	270	1680	665	1590

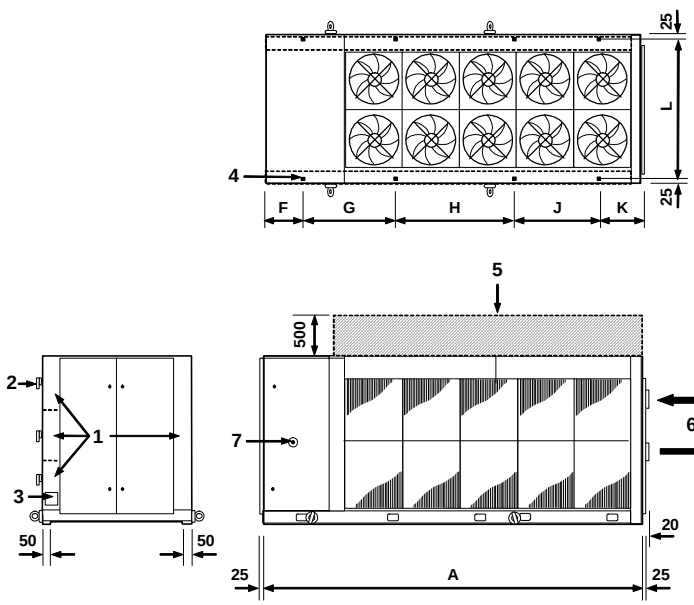
(1) Have only 4 fixing and 4 point loadings.
(2) Based on standard unit, for units fitted with pump, tank and expansion vessel options, please contact Airedale.

Installation Data

DIMENSIONS

DOUBLE ROW FANS - /2

UCC110 - UCC450 (Except UCC125 & UCC150)



1 Electric Control Panels
2 Mains Electric Isolators
3 Mains Cable Entry
4 20mm Ø Mounting Holes
5 Optional Plenum Extension
6 Water Flange Connections:
UCC160-250 DN80 PN16
UCC275-450 DN100 PN16
7 Emergency Stop

Model D		A	B	C	D	E	F	G	H	J	K	L
UCC110D - UCC160D	mm	2365	1850	2100	955	925	275	1600	(1)	-	490	1800
UCC180D - UCC250D	mm	3170	1850	2100	955	925	480	1100	1100	(2)	490	1800
UCC275D - UCC300D	mm	4650	2200	2180	975	1100	350	1750	1925	(2)	625	2150
UCC330D - UCC360D	mm	5500	2200	2180	975	1100	350	1350	1350	1925	525	2150
UCC400D - UCC450D	mm	6350	2200	2180	975	1100	350	1700	1925	1925	450	2150

Model DQ		A	B	C	D	E	F	G	H	J	K	L
UCC110DQ - UCC130DQ	mm	2365	1850	2100	955	925	275	1600	(1)	-	490	1800
UCC160DQ - UCC200DQ	mm	3170	1850	2100	955	925	480	1100	1100	-	490	1800
UCC225DQ - UCC250DQ	mm	3975	1850	2100	955	925	480	1500	1500	(2)	495	1800
UCC275DQ	mm	4650	2200	2180	975	1100	350	1750	1925	(2)	625	2150
UCC300DQ - UCC330DQ	mm	5500	2200	2180	975	1100	350	1350	1350	1925	525	2150
UCC360DQ - UCC400DQ	mm	6350	2200	2180	975	1100	350	1700	1925	1925	450	2150
UCC450DQ	mm	7200	2200	2180	975	1100	350	1700	2700	2000	450	2150

Model DSQ		A	B	C	D	E	F	G	H	J	K	L
UCC110DSQ	mm	2365	1850	2100	955	925	275	1600	(1)	-	490	1800
UCC130DSQ - UCC200DSQ	mm	3170	1850	2100	955	925	480	1100	1100	(2)	490	1800
UCC225DSQ - UCC250DSQ	mm	3975	1850	2100	955	925	480	1500	1500	(2)	495	1800
UCC275DSQ	mm	5500	2200	2180	975	1100	350	1350	1350	1925	525	2150
UCC300DSQ	mm	6350	2200	2180	975	1100	350	1700	1925	1925	450	2150
UCC330DSQ - UCC360DSQ	mm	7200	2200	2180	975	1100	350	1700	2700	2000	450	2150
UCC400DSQ - UCC450DSQ	mm	8050	2200	2180	975	1100	350	1700	2800	2725	525	2150

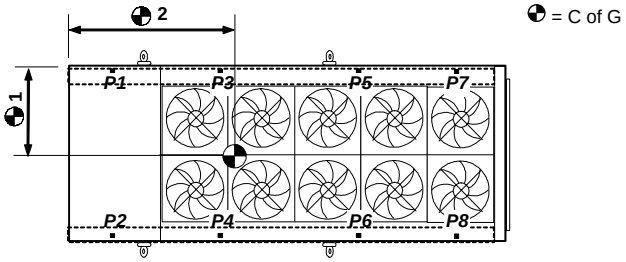
(1) Have only 4 fixing and 4 point loadings.
(2) Have only 6 fixing and 6 point loadings.

Installation Data

POINT LOADINGS, WEIGHTS & CENTRE OF GRAVITY (C OF G)

DOUBLE ROW FANS - /2

UCC110 - UCC450 (Except UCC125 & UCC150)



Model D		P1	P2	P3	P4	P5	P6	P7	P8	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC110D-4/2	kg	380	380	(1)	(1)	(1)	(1)	270	270	1300	915	825
UCC130D-4/2	kg	405	405	(1)	(1)	(1)	(1)	275	275	1360	915	810
UCC160D-4/2	kg	475	475	(1)	(1)	(1)	(1)	240	240	1430	925	810
UCC180D-6/2	kg	630	560	140	125	(2)	(2)	140	150	1745	890	1020
UCC200D-6/2	kg	640	570	145	130	(2)	(2)	140	150	1775	890	1030
UCC225D-6/2	kg	660	660	155	155	(2)	(2)	155	160	1945	925	1015
UCC250D-6/2	kg	665	665	155	155	(2)	(2)	155	160	1955	925	1010
UCC275D-8/2	kg	705	705	400	400	(2)	(2)	235	235	2680	1100	1515
UCC300D-8/2	kg	735	735	420	420	(2)	(2)	255	255	2820	1100	1535
UCC330D-10/2	kg	715	715	405	405	200	200	190	190	3020	1100	1650
UCC360D-10/2	kg	730	730	420	420	240	240	230	230	3240	1100	1755
UCC400D-12/2	kg	770	770	480	480	290	290	280	280	3640	1100	2230
UCC450D-12/2	kg	805	805	500	500	300	300	280	280	3770	1100	2200

Model DQ		P1	P2	P3	P4	P5	P6	P7	P8	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC110DQ-4/2	kg	380	380	(1)	(1)	(1)	(1)	270	270	1300	915	825
UCC130DQ-4/2	kg	405	405	(1)	(1)	(1)	(1)	275	275	1360	915	810
UCC160DQ-6/2	kg	570	570	115	115	(2)	(2)	115	175	1660	955	1015
UCC180DQ-6/2	kg	645	570	130	120	(2)	(2)	130	180	1775	910	1010
UCC200DQ-6/2	kg	655	580	135	125	(2)	(2)	135	185	1815	910	1025
UCC225DQ-8/2	kg	700	700	165	165	(2)	(2)	165	220	2115	950	1260
UCC250DQ-8/2	kg	710	710	165	165	(2)	(2)	220	220	2190	925	1310
UCC275DQ-8/2	kg	735	735	395	395	(2)	(2)	235	235	2730	1100	1490
UCC300DQ-10/2	kg	700	700	375	375	215	215	205	205	2990	1100	1710
UCC330DQ-10/2	kg	715	715	405	405	250	250	240	240	3220	1100	1800
UCC360DQ-12/2	kg	735	735	440	440	270	270	260	260	3410	1100	2210
UCC400DQ-12/2	kg	770	770	485	485	300	300	290	290	3690	1100	2260
UCC450DQ-14/2	kg	810	810	535	535	360	360	340	340	4090	1100	2635

Model DSQ		P1	P2	P3	P4	P5	P6	P7	P8	Operating Weight	C of G1 (mm)	C of G2 (mm)
UCC110DSQ-4/2	kg	380	380	(1)	(1)	(1)	(1)	270	270	1300	915	825
UCC130DSQ-6/2	kg	430	430	280	280	(2)	(2)	205	205	1830	915	1055
UCC160DSQ-6/2	kg	570	570	115	115	(2)	(2)	115	175	1660	955	1015
UCC180DSQ-6/2	kg	645	570	130	120	(2)	(2)	130	180	1775	910	1010
UCC200DSQ-6/2	kg	655	580	135	125	(2)	(2)	135	185	1815	910	1025
UCC225DSQ-8/2	kg	700	700	165	165	(2)	(2)	165	220	2115	950	1260
UCC250DSQ-8/2	kg	710	710	165	165	(2)	(2)	220	220	2190	925	1310
UCC275DSQ-10/2	kg	680	680	350	350	255	255	245	245	3060	1100	1850
UCC300DSQ-12/2	kg	715	715	390	390	280	280	270	270	3310	1100	2270
UCC330DSQ-14/2	kg	740	740	445	445	320	320	310	310	3630	1100	2635
UCC360DSQ-14/2	kg	780	780	490	490	340	340	330	330	3880	1100	2640
UCC400DSQ-16/2	kg	810	810	525	525	460	460	350	350	4290	1100	2895
UCC450DSQ-16/2	kg	840	840	545	545	470	470	350	350	4410	1100	2860

(1) Have only 4 fixing and 4 point loadings.
(2) Have only 6 fixing and 6 point loadings.
(3) Calculation based on standard unit, for units fitted with pump, tank and expansion vessel options, please contact Airedale.

Installation Data

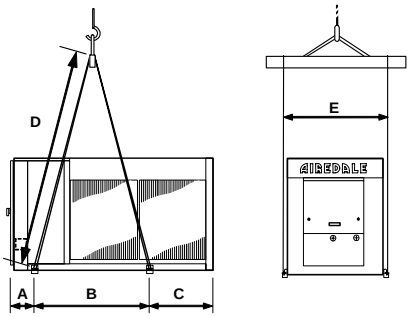
UNIT LIFTING

- Employ lifting specialists.
- Local codes and regulations relating to the lifting of this type of equipment should be observed.
- Use the lifting eye bolts/lifting lugs provided.
- Attach lifting chains to the 4 lifting eye bolts/lifting lugs provided, each chain and eye bolt must be capable of lifting the whole chiller.
- Use the appropriate spreader bars/lifting slings with the holes/lugs provided.
- Lift the unit slowly and evenly.
- If the unit is dropped, it should immediately be checked for damage and reported to Airedale Service.

CAUTION **Only use lifting points provided.**

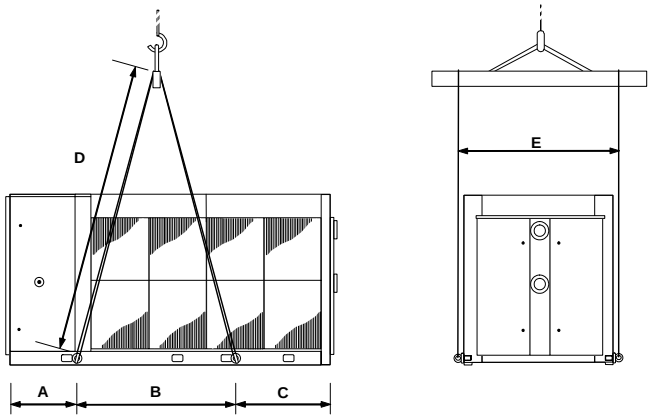
The unit should be lifted from the base and where possible, with all packing and protection in position. If any other type of slinging is used, due care should be taken to ensure that the slings do not crush the casework or coil.

LIFTING DIMENSIONS



UCC30 - 80 (Except UCC75)		A	B(1)	C(1)	D(1)	E
1 FAN /1	mm	300	1050 (1450)	300 (300)	1900 (2200)	1270
2 FANS /1	mm	300	1450	750	2200	1270

(1) Dimensions in brackets refer to the optional buffer tank when fitted.



UCC75 - UCC450 (Except UCC80)			A	B	C	D	E
75, 100, 125 & 150	..-2/1	mm	290	1900	585	2500	1450
	..-3/1	mm	290	2015	1320	2500	1450
	..-4/1	mm	290	2870	1315	3000	1450
110, 130,160 ,180, 200, 225 & 250	..-4/2	mm	180	1580	605	2500	2000
	..-6/2	mm	595	1650	925	2500	2000
	..-8/2	mm	595	2050	1330	2500	2350
275, 300, 330, 360, 400 & 450	..-8/2	mm	465	2560	1625	3000	2350
	..-10/2	mm	465	3135	1900	3500	2350
	..-12/2	mm	465	3610	2275	3500	2350
	..-14/2	mm	465	4385	2350	4000	2350
	..-16/2	mm	465	5035	2550	5000	2350

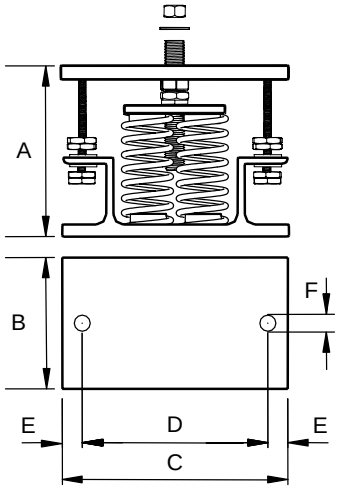
Installation Data

ANTI VIBRATION MOUNTING (OPTIONAL)

Spring Type

Each mount is coloured to indicate the different loads, refer to **Loose Parts Instructions** supplied for correct allocation.

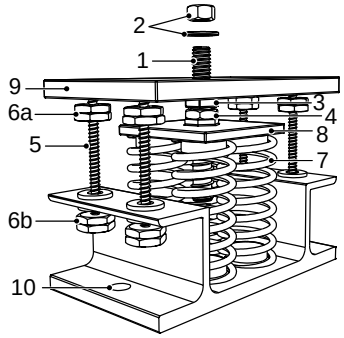
Dimensions



			A(1)	B	C	D	E	FØ
UCC30-70 **UCC75** **UCC80** **UCC100** **UCC125** **UCC150**	(2)	mm	136	110	180	148	16	11
UCC110 **UCC130** **UCC160-450**	(3)	mm	180	130	225	186	20	16

(1) Unloaded dimension
(2) 2 spring type
(3) 4 spring type

Components



1 Locating Screw
2 Retaining Nut & Washer
3 Levelling Screw
4 Levelling Lock Nut
5 Retaining Studs
6a Upper Retaining Nuts
6b Lower Retaining Nuts
7 Spring assembly
8 Pressure Plate
9 Top Plate
10 Bolting-down holes

Installation

1 Locate and secure mount using bolting down holes (10) in base plate.
2 Ensure mounts are located in line with the unit base.
3 If applicable, remove compressor enclosure covers to allow access to mount fixing holes in the unit base.
4 Lock the upper retaining nuts (6a) to the underside of the top plate (9) before a load is applied.
5 Remove retaining nut and washer (2), lower the unit onto the mounts and replace retaining nut and washer.
6 Beginning with the mount with the largest deflection, adjust the height of each mount using the levelling screw (3).

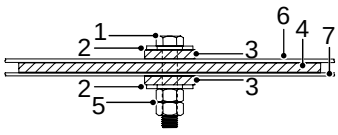
CAUTION **Mountings must be adjusted incrementally in turn. Do not fully adjust 1 mount at a time as this may overload and damage springs.**

7 When all mounts are level, lock each into place using the levelling lock nut (4).
8 Lock all retaining nuts (6a and 6b) to the extreme ends of the retaining studs (5).

CAUTION **Do not connect any services until all anti vibration mounts have been fully adjusted.**

Pad Type

Components/Installation



1 M16 Bolt (Not Supplied)
2 Washer (Not Supplied)
3 Fixing Pad 506-063
4 A V Pad 506-062
5 2 x M16 Nut (Not Supplied)
6 Unit Base
7 Unit Mounting Plinth

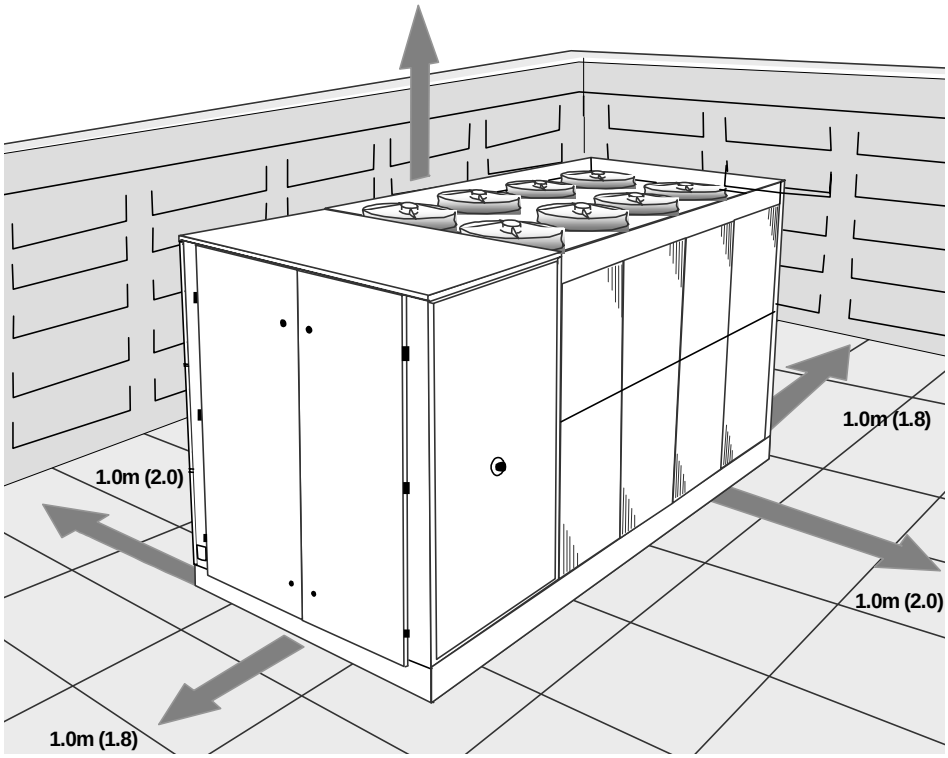
Installation Data

POSITIONING

The installation position should be selected with the following points in mind:

- Position on a stable and even base, levelled to ensure that the compressor operates correctly.
- Levelling should be to +/- 5mm.
- Where vibration transmission to the building structure is possible, fit spring anti-vibration mounts and flexible water connections.
- Observe airflow and maintenance clearances.
- Pipework and electrical connections are readily accessible.
- Where multiple units are installed, due care should be taken to avoid the discharge air from each unit adversely affecting other units in the vicinity.
- Within a side enclosed installation, the fan MUST be higher than the enclosing structure.
- Figures in brackets indicate airflow and maintenance clearances for side-enclosed or multiple chiller applications.
- Ensure there are no obstructions directly above the fans.
- Allow free space above the fans to prevent air recirculation.

CAUTION **Prior to connecting services, ensure that the equipment is installed and completely level.**



Installation Data

WATER SYSTEM

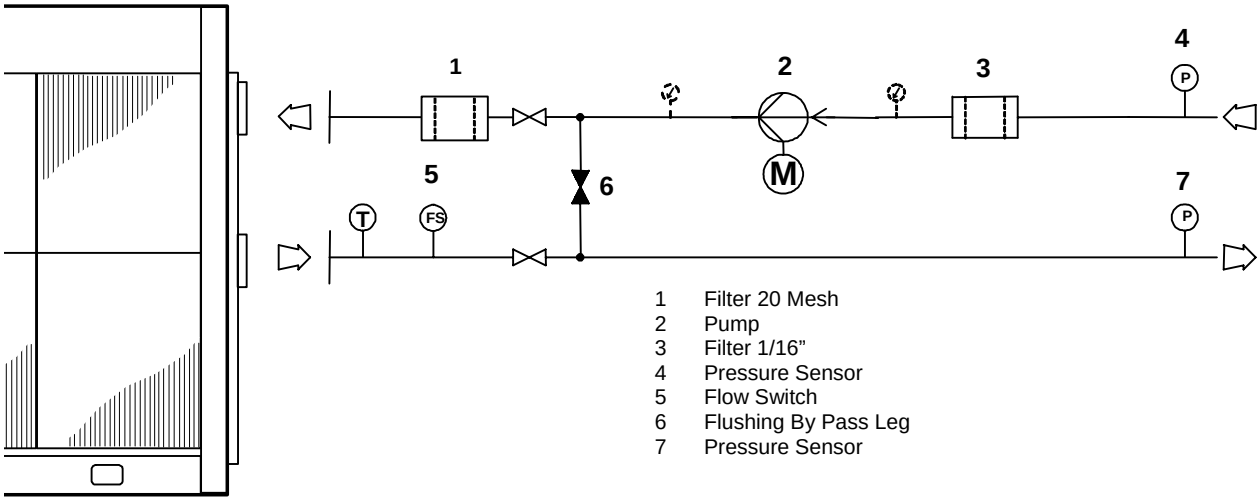
Chilled water pipework and ancillary components must be installed in accordance with:

- National and Local Water supply company standards.
- The manufacturer's instructions are followed when fitting ancillary components.
- The system water is treated to prevent corrosion and algae forming.
- In ambients of 0°C and below, where static water can be expected, or when water supply temperatures of +5°C or below is required, the necessary concentration of Glycol or use of an electrical trace heater must be included.
- The schematic is referred to as a guide to ancillary recommendations.

CAUTION **The unit water connections are NOT designed to support external pipework, pipework should be supported during installation.**

The water flow commissioning valve set is not shown in the diagram, as the valve can be fitted elsewhere within the chilled water circuit.

STANDARD RECOMMENDED INSTALLATION (PARTS SUPPLIED BY OTHERS)



1 Filter 20 Mesh
2 Pump
3 Filter 1/16”
4 Pressure Sensor
5 Flow Switch
6 Flushing By Pass Leg
7 Pressure Sensor

CAUTION **Constant water flow MUST be maintained. Variable water volume is NOT recommended and may invalidate warranty.**

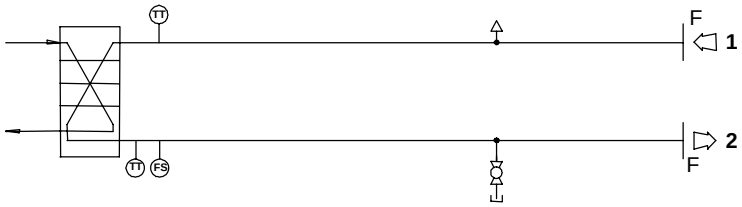
CAUTION **Following components are fitted within the chiller unit as standard:**

- **Temperature Sensors**
- **Drain Point**
- **Auto Air Vent**

FLOW SCHEMES

Basic Supplied Water Schematic
(Includes Flow Switch Optional Extra)

Key: 1 Water In
2 Water Out



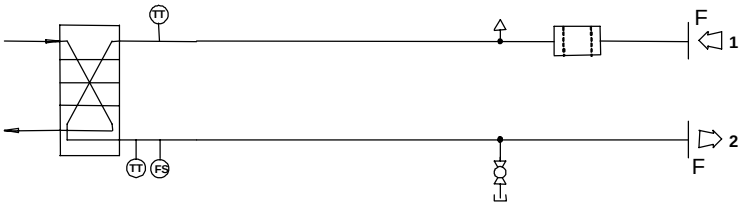
Installation Data

FLOW SCHEMES

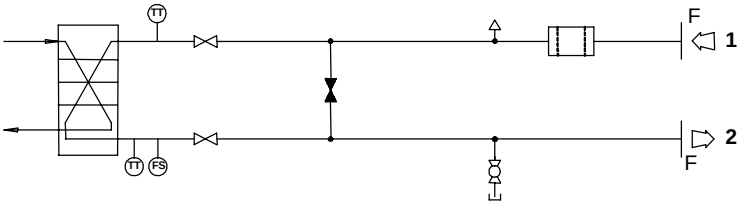
Key: 1 Water In
2 Water Out

Optional Flow Schemes

Filter Only Scheme - Comprises:
Standard Circuit plus:
Optional Extras:
- Flow Switch
- 20 Mesh Water Filter



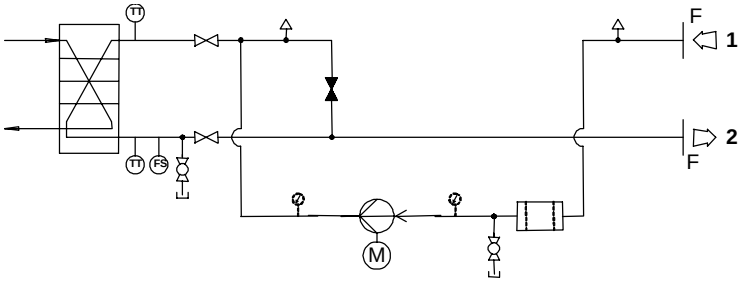
Filter - Flushing Bypass Scheme - Comprises:
Standard Circuit plus:
Optional Extras:
- Flow Switch
- 20 Mesh Water Filter
- Flushing Bypass Circuit



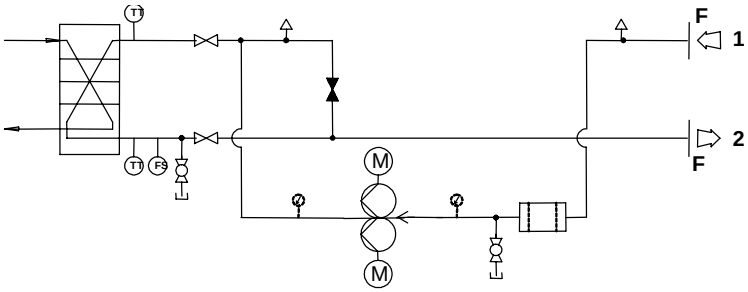
PUMP OPTIONS - FLOW SCHEMES

Key: 1 Water In
2 Water Out

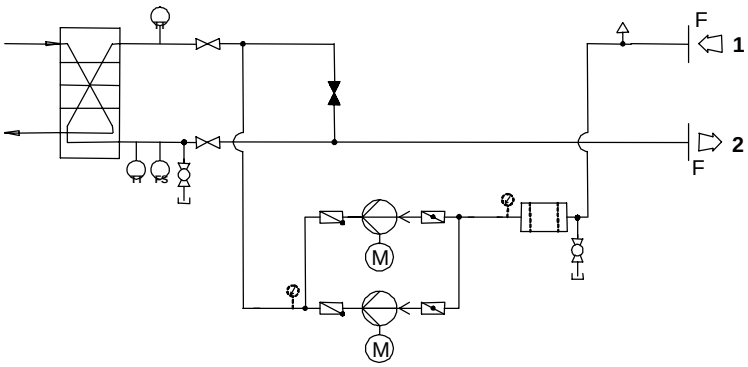
Single Head Pump Scheme - Comprises:
Standard Circuit plus:
Optional Extras:
- Flow Switch
- 20 Mesh Water Filter
- Flushing Bypass Circuit
- Single Head Pump



Twin Head Pump Scheme - Comprises:
Standard Circuit plus:
Optional Extras:
- Flow Switch
- 20 Mesh Water Filter
- Flushing Bypass Circuit
- Twin Head Pump



Single Head Run/Standby Pump Scheme - Comprises:
Standard Circuit plus:
Optional Extras:
- Flow Switch
- 20 Mesh Water Filter
- Flushing Bypass Circuit
- Single Head Run/Standby Pump



Installation Data

WATER SYSTEM

Component Recommended Requirements

The recommended requirements to allow commissioning to be carried out correctly are:

- The inclusion of Binder Points adjacent to the flow and return connections, to allow temperature and pressure readings.
- A flow switch or equivalent, fitted adjacent to the water outlet side of the Chiller.

CAUTION **The correct operation of the flow switch is critical if the chiller warranty is to be valid.**

- A 20 mesh strainer fitted prior to the evaporator inlet.
- A water-flow commissioning valve set fitted to the system.
- In multiple chiller installations, 1 commissioning valve set is required per chiller.
- Air vents are to be installed at all high points and where air is likely to be trapped at intermediate points.
- Drain points are to be installed at all low points in the system and in particular adjacent to the unit for maintenance to be carried out.
- Isolating valves should be installed adjacent to all major items of equipment for ease of maintenance.
- Balancing valves can be installed if required to aid correct system balancing.
- All chilled water pipework must be insulated and vapour sealed to avoid condensation.
- If several units are installed in parallel adjacent to each other, reverse return should be applied to avoid unnecessary balancing valves.

Pump Statement

When installing circulating water pumps or equipment containing them, the following rules should be applied:

- Ensure the system is filled with water then vented and the pump primed with water before running the pump. This is required because the pumped liquid cools the pump bearings and mechanical seal faces.
- To avoid cavitation the NPSH (Net Positive Suction Head) incorporating a safety margin of 0.5m head must be available at the pump inlet during operation.

Pressure Testing

When all the pipework has been connected in the system, proceed as follows:

- Ensure all shut off and control valves are fully open.
- Pressurise system to the operating pressure, hold for 1 hour (a gradual fall in pressure shown on the gauge indicates a leak).
- Leaks should be found and repaired and the unit pressure tested for a further hour.

When the pressure remains at the operating pressure for 1 hour, the system can be considered leak free.

CAUTION **Although a pressure of 1.5 x working pressure is adequate for testing purposes, most local water authorities require 2 x working pressure.**

Filling

CAUTION **The whole system MUST be flushed prior to filling to remove debris left in the water pipework by using a flushing bypass as shown to avoid serious damage to the plate evaporator.**

During filling the system should be vented at all high points.

Once the system has been completely vented all vents should be closed.

To prevent air locking in the system it is advisable to fill the systems from the lowest point, ie drain point on pipework.

If auto air vents are used then we strongly recommend an auto pressurisation unit be fitted to the system.

Installation Data

WATER SYSTEM			UCC30SQ-1/1 UCC30DQ-1/1	UCC40SQ-1/1 UCC40DQ-1/1	UCC50SQ-2/1 UCC50DQ-2/1	UCC60SQ-2/1 UCC60DQ-2/1	UCC70SQ-2/1 UCC70DQ-2/1	UCC80SQ-2/1 UCC80DQ-2/1
Connections								
Water Inlet / Outlet Female BSP		in	1 1/2	1 1/2	2	2	2	2
Water Drain/Bleed		in	1/2	1/2	1/2	1/2	1/2	1/2
Water System								
Min. System Water Volume	(2)	l	308	411	514	493	719	822
Max. System Press		Bar	10	10	10	10	10	10
OPTIONAL EXTRAS - ALL MODELS								
Water Pump	(3)				In Line Pump			
Nom External Head Std Single / R&S		kPa	145	121	133	113	131	115
Nom External Head Larger Single/R&S		kPa	189	147	235	215	188	169
Nom External Head Standard Twin		kPa	145	135	131	121	116	107
Nom External Head Larger Twin		kPa	195	185	180	170	164	155
Expansion Tank	(4)							
Water Capacity		l	35	35	35	35	35	35
Buffer Tank								
Max. Water Capacity	(5)	l	250	250	250	250	250	250
Pressurisation Unit								
Water Inlet Connection		in	1/2	1/2	1/2	1/2	1/2	1/2

			UCC75D-2/1	UCC100D-2/1	UCC110D-4/2	UCC125D-3/1	UCC130D-4/2	UCC150D-3/1
Connections								
Water Inlet / Outlet	(1)		DN65	DN65	DN80	DN65	DN80	DN65
Water Drain/Bleed		In	1/2	1/2	1/2	1/2	1/2	1/2
Water System								
Min. System Water Volume	(2)	l	399	519	533	453	460	800
Max. System Press		Bar	10	10	10	10	10	10
OPTIONAL EXTRAS - ALL MODELS								
Water Pump	(3)				In Line Pump			
Nom External Head Std Single / R&S		kPa	125	115	110	100	100	155
Nom External Head Larger Single/R&S		kPa	200	190	160	170	150	200
Nom External Head Standard Twin		kPa	105	155	115	150	100	140
Nom External Head Larger Twin		kPa	135	130	165	205	150	200
Expansion Tank	(4)							
Water Capacity		l	50	50	50	50	50	50
Buffer Tank								
Max. Water Capacity - D		l	250	250	250	420	250	420
Max. Water Capacity - SQ/DQ		l	250	420	250	420	250	420
Max. Water Capacity - SSQ/DSQ		l	250	420	250	420	250	420
Pressurisation Unit								
Water Inlet Connection		in	1/2	1/2	1/2	1/2	1/2	1/2

(1) Flanged to PN16.
(2) For minimum system volume refer to the **Technical Manual**.
(3) Nominal Cooling Duties based on 12/7°C water temperature and 30°C ambient, where output is the chilled water duty and input is the compressor input power.
(4) Expansion vessel may require reselecting for glycol and system volume, please refer to Airedale
(5) UCC30 and UCC40 dimensions change to 1450 x 2500 x 1310 when Buffer Tank fitted.

Installation Data

WATER SYSTEM			UCC160D-4/2	UCC180D-6/2	UCC200D-6/2	UCC225D-6/2	UCC250D-6/2	UCC275D-8/2
Connections								
Water Inlet / Outlet	(1)		DN 80	DN 80	DN 80	DN 80	DN 80	DN 100
Water Drain/Bleed		in	1/2	1/2	1/2	1/2	1/2	1/2
Water System								
Min. System Water Volume	(2)	l	802	669	736	820	1304	877
Max. System Press		Bar	10	10	10	10	10	10
OPTIONAL EXTRAS - ALL MODELS								
Water Pump	(3)				In Line Pump			
Nom External Head Std Single / R&S		kPa	115	100	100	100	95	97
Nom External Head Larger Single/R&S		kPa	170	156	155	150	149	160
Nom External Head Standard Twin		kPa	115	100	99	93	87	95
Nom External Head Larger Twin		kPa	167	150	148	142	137	158
Expansion Tank	(4)							
Water Capacity		l	50	50	50	50	50	50
Buffer Tank	(6)							
Max. Water Capacity - D		l	250	250	250	250	250	420
Max. Water Capacity - SQ/DQ		l	250	250	250	420	420	420
Max. Water Capacity - SSQ/DSQ		l	250	420	420	420	420	420
Pressurisation Unit								
Water Inlet Connection		in	1/2	1/2	1/2	1/2	1/2	1/2

			UCC300D-8/2	UCC330D-10/2	UCC360D-10/2	UCC400D-12/2	UCC450D-12/2
Connections							
Water Inlet / Outlet	(1)		DN 100	DN 100	DN 100	DN 100	DN 100
Water Drain/Bleed		in	1/2	1/2	1/2	1/2	1/2
Water System							
Min. System Water Volume	(2)	l	897	1130	1122	1322	1348
Max. System Press		Bar	10	10	10	10	10
OPTIONAL EXTRAS - ALL MODELS							
Water Pump	(3)				In Line Pump		
Nom External Head Std Single / R&S		kPa	98	137	135	128	125
Nom External Head Larger Single/R&S		kPa	162	158	156	151	181
Nom External Head Standard Twin		kPa	127	119	115	105	127
Nom External Head Larger Twin		kPa	160	156	154	148	175
Expansion Tank	(4)						
Water Capacity		l	50	50	50	50	50
Buffer Tank	(5)						
Max. Water Capacity - D		l	420	420	420	420	420
Max. Water Capacity - SQ/DQ		l	420	420	420	420	420
Max. Water Capacity - SSQ/DSQ		l	420	420	420	420	420
Pressurisation Unit							
Water Inlet Connection		in	1/2	1/2	1/2	1/2	1/2

(1) Flanged to PN16.
(2) For minimum system volume refer to the **Technical Manual**.
(3) Nominal Cooling Duties based on 12/7°C water temperature and 30°C ambient, where output is the chilled water duty and input is the compressor input power.
(4) Expansion vessel may require reselecting for glycol and system volume, please refer to Airedale
(5) 8 Fan units only: Maximum Water Capacity becomes 250 litres when the pump option is also selected.

Installation Data

GLYCOL DATA

Glycol is recommended when a supply water temperature of +5°C or below is required or when static water can be exposed to freezing temperatures.

Ethylene Glycol Nominal Correction Factors

Glycol in System / Freezing Point ºC		10% / -4°C	20% / -9°C	30% / -15°C	40% / -23°C
Cooling Duty	Catalogue Data x by:	0.98	0.97	0.95	0.93
Input Power		0.99	0.98	0.96	0.95
Water Flow		0.99	1.02	1.04	1.07
Pressure Drop		1.05	1.20	1.38	1.57

Propylene Glycol Nominal Correction Factors

Glycol in System / Freezing Point ºC		10% / -2°C	20% / -6°C	30% / -12°C	40% / -20°C
Cooling Duty	Catalogue Data x by:	0.97	0.95	0.91	0.88
Input Power		0.99	0.98	0.96	0.95
Water Flow		0.98	0.97	0.95	0.95
Pressure Drop		1.08	1.17	1.31	1.45

Example **UCC250D-6/2 operating at 7/12, 30°C Ambient, 20% Ethylene Glycol**

		Catalogue Figure	Multiplier		Corrected Figure
Cooling kW	(refer to **Technical Manual**)	269.2	x 0.97	20% Ethylene Glycol =	261.1 kW
Input kW	(refer to **Technical Manual**)	79.2	x 0.98		77.6 kW
Flow l/s	(calculated $\frac{\text{(DX (Mechanical Cooling kW)}}{\Delta T \times 4.19}$)	12.8	x 1.02		13.1 l/s
Pressure Drop kPa	(refer to ***Waterside Pressure Drops***)	50.0	x 1.20		60.0 kPa

CAUTION

Waste glycol needs to be handled responsibly, recycled or turned over to professional personnel for correct disposal. Most anti-freeze manufacturers recommend that used anti-freeze be collected and disposed according to Local Legislation. Waste glycol should NOT be drained onto the ground, rainwater drainage system or natural waters.

If the glycol contains heavy metals or other contaminants from gas or oil, the level of hazard posed by the glycol is increased and could be characterised as hazardous waste.

STEPS IF GLYCOL IS RELEASED/SPILLED
Small spill - soak up with absorbent material.
Large spill - contain spill and pump to suitable container for disposal.

Installation Data

ELECTRICAL DATA

General

- As standard the equipment is designed for 400V, 3 phase, 3 wire 50Hz and a separate permanent 230V, 1 phase, 50Hz supply, to all relevant IEE regulations, British standards and IEC requirements.

CAUTION

- **Ensure correct phase rotation.**
- A fused and isolated electrical supply of the appropriate phase, frequency and voltage should be installed.
- The control voltage to the interlocks is 24V. Always size the low voltage interlock and protection cabling for a maximum voltage drop of 2V.

CAUTION

- **Wires should be capable of carrying the maximum load current under non-fault conditions at the stipulated voltage.**
- Avoid large voltage drops on cable runs, particularly low voltage wiring.
- Once the connecting pipework is complete the electrical supply can be connected by routing the cable through the appropriate casing hole and connecting the cables, refer to the Wiring Diagram supplied with each unit.

CAUTION **A separately fused, locally isolated, permanent single phase and neutral supply MUST BE FITTED for the compressor sump heater, evaporator trace heating and control circuits, FAILURE to do so could INVALIDATE WARRANTY.**

Interlocks & Protection

Always electrically interlock the operation of the chiller with the pump controls **and** water flow switch.

These safety devices prevent the chiller operating with low water flow which can cause serious damage.

CAUTION **Failure to install both safety devices will invalidate the chiller warranty.**

CAUTION **Do not rely solely on the BMS to protect the chiller against low flow conditions.**

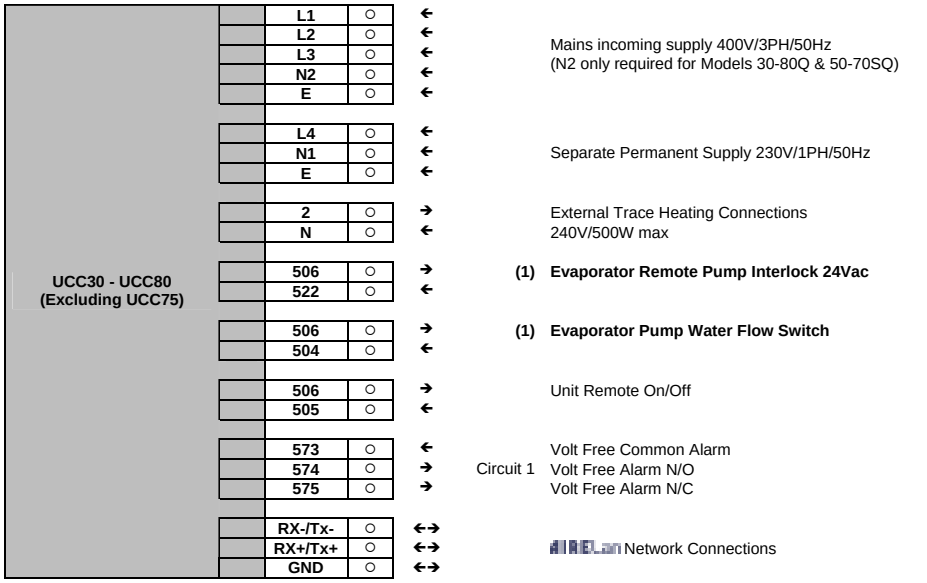
An evaporator pump interlock and flow switch MUST be directly wired to the chiller, refer to *Interconnecting Wiring* diagram.

Installation Data

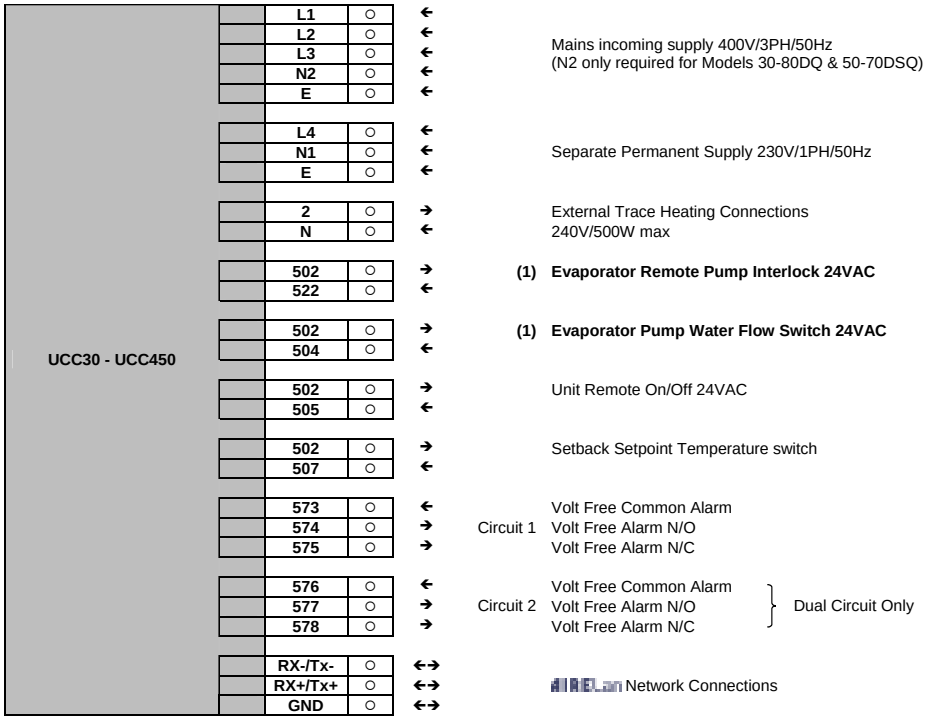
INTERCONNECTING WIRING

No Pumps

Single Circuit
(not including: leak detector, remote setpoint adjust and differential pressure switch)



Double Circuit



CAUTION **(1) MUST be directly wired to the chiller to validate warranty.**

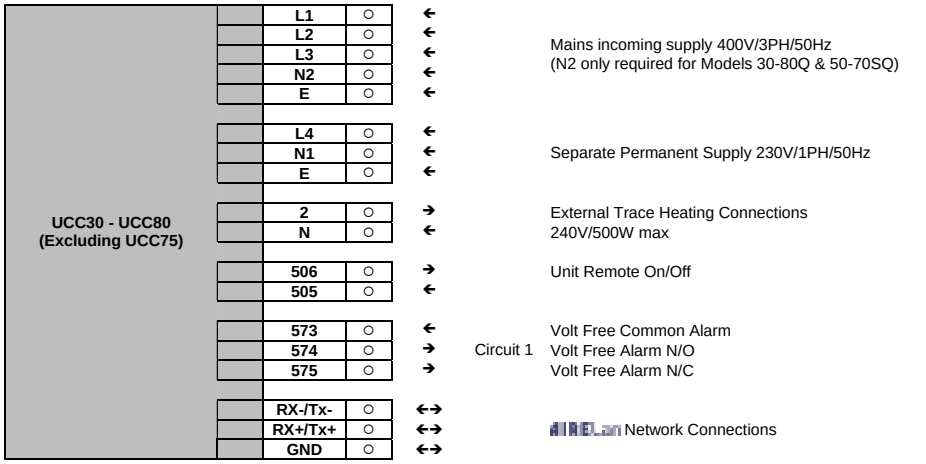
Installation Data

INTERCONNECTING WIRING

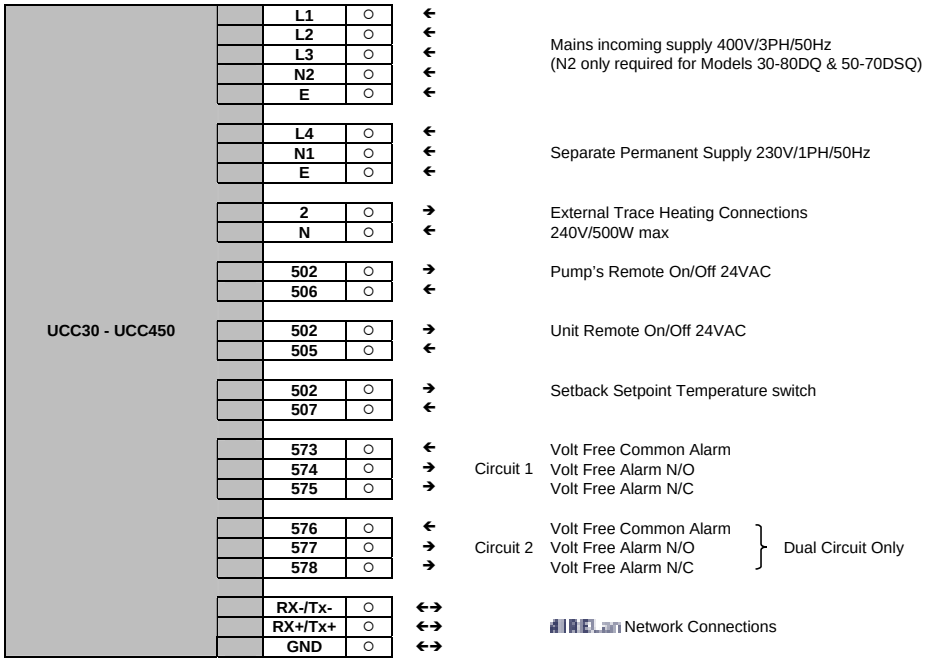
With Pumps

Single Circuit

(not including: leak detector, remote setpoint adjust and differential pressure switch)



Double Circuit



Installation Data

ELECTRICAL DATA			UCC30SQ-1/1 UCC30DQ-1/1	UCC40SQ-1/1 UCC40DQ-1/1	UCC50SQ-2/1 UCC50DQ-2/1	UCC60SQ-2/1 UCC60DQ-2/1	UCC70SQ-2/1 UCC70DQ-2/1	UCC80SQ-2/1 UCC80DQ-2/1
Unit Data								
Nominal Run Amps	(1)	A	22	27	35	38	41	51
Maximum Start Amps	(2)	A	109	113	141	156	159	204
Permanent Supply		VAC			230 V 1 PH 50 Hz			
Mains Supply		VAC			400 V 3 PH 50 Hz			
Rec Permanent Fuse Size		A	16	16	16	16	16	16
Rec Mains Fuse Size		A	32	40	50	50	63	80
Max Permanent Incoming Cable Size		mm²			4 mm² terminals			
Max Mains Incoming Cable Size		mm²			35 (Direct to Isolator)			
Control Circuit		VAC			24V/230VAC			
Evaporator								
Pad Heater Rating		W	40	40	40	40	40	40
External Trace Heating								
Available (fitted by others)		W	500	500	500	500	500	500
Condenser Fan - Per Fan								
Quantity			1	1	2	2	2	2
Full Load Amps		A	3.0	3.5	3.0	3.0	3.0	3.5
Locked Rotor Amps		A	7.0	7.5	7.0	7.0	7.0	7.5
Motor Rating		kW	0.63	0.78	0.63	0.63	0.63	0.78
Compressor - Per Compressor								
Quantity			2	2	2	2	2	2
Motor Rating		kW	4.7	6.2	8.1	9.5 / 8.1	9.5	11.7
Nominal Run Amps	(1)	A	9.3	11.7	14.6	17.6 / 14.6	17.6	22.0
Sump Heater Rating		W	70.0	65.0	65.0	65.0 / 75.0	65.0	70.0
Start Amps	(2)		101.0	98.0	120.0	135.0/120.0	135.0	175.0
Type Of Start					Direct on line			
SUPER QUIET SQ			**UCC30SSQ-1/1 UCC30DSQ-1/1**	**UCC40SSQ-1/1 UCC40DSQ-1/1**	**UCC50SSQ-2/1 UCC50DSQ-2/1**	**UCC60SSQ-2/1 UCC60DSQ-2/1**	**UCC70SSQ-2/1 UCC70DSQ-2/1**	**UCC80SSQ-2/1 UCC80DSQ-2/1**
			All data as above except:					
Condenser Fan - Per Fan								
Full Load Amps		A	1.15	1.15	3.50	3.50	3.50	1.15
Locked Rotor Amps		A	2.10	2.10	7.50	7.50	7.50	2.10
Motor Rating		kW	0.70	0.70	0.78	0.78	0.78	0.70
OPTIONAL EXTRAS								
Power Factor Correction								
Nominal Run Amps	(1)	A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum Start Amps	(2)	A	N/A	N/A	N/A	N/A	N/A	N/A
Recommended Mains Fuse		A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor Nominal Run Amps - Per Compressor		A	N/A	N/A	N/A	N/A	N/A	N/A
Electronic Soft-start								
Nominal Run Amps	(1)	A	22	27	35	38	41	51
Maximum Start Amps	(2)	A	73	74	93	102	105	112
Recommended Mains Fuse		A	32	40	50	50	63	80
Single Head Pump (or Run/Standby)								
Unit Nominal Run Amps	(1)	A	24	29	38	41	44	54
Recommended Mains Fuse		A	40	50	63	63	63	80
Motor Rating		kW	0.55	0.55	0.90	0.90	1.10	1.10
Full Load Amps		A	1.9	1.9	2.7	2.7	2.9	2.9
Larger Single Head Pump (or Run/Standby)								
Unit Nominal Run Amps	(1)	A	24	30	39	42	45	54
Recommended Mains Fuse		A	40	50	63	63	63	80
Motor Rating		kW	0.75	0.90	1.50	1.50	1.50	1.50
Full Load Amps		A	2.3	3.0	4.0	4.0	3.4	3.4
Twin Head Pump								
Unit Nominal Run Amps	(1)	A	25	30	38	41	44	54
Recommended Mains Fuse		A	40	50	63	63	63	80
Motor Rating		kW	1.5	1.5	1.5	1.5	1.5	1.5
Full Load Amps		A	3.2	3.2	3.2	3.2	3.2	3.2
Larger Twin Head Pump								
Unit Nominal Run Amps	(1)	A	26	32	40	43	46	56
Recommended Mains Fuse		A	40	50	63	63	63	80
Motor Rating		kW	2.2	2.2	2.2	2.2	2.2	2.2
Full Load Amps		A	4.6	4.6	4.6	4.6	4.6	4.6

(1) Based at 12/7°C water and 30°C ambient
(2) Starting amps refers to the direct on line connections.

Installation Data

ELECTRICAL DATA

			UCC75D-2/1	UCC100D-2/1	UCC110D-4/2	UCC125D-3/1	UCC130D-4/2	UCC150D-3/1
Unit Data								
Nominal Run Amps	(1)	A	50	62	69	79	84	93
Maximum Start Amps	(2)	A	140	167	175	217	222	246
Permanent Supply		VAC			230 V 1 PH 50 Hz			
Mains Supply		VAC			400 V 3 PH 50 Hz			
Rec Permanent Fuse Size		A	16	16	16	16	16	16
Rec Mains Fuse Size		A	63	80	100	125	125	125
Max Permanent Incoming Cable Size		mm²			4 mm² terminals			
Max Mains Incoming Cable Size		mm²	70 (Direct to MCCB)	70 (Direct to MCCB)	Direct to Bus Bar	70 (Direct to MCCB)	Direct to Bus Bar	70 (Direct to MCCB)
Control Circuit		VAC			24V/230V AC			
Evaporator								
Pad Heater Rating		W	40	40	80	80	80	80
External Trace Heating								
Available (fitted by others)		W	500	500	500	500	500	500
Condenser Fan - Per Fan								
Quantity			2	2	4	3	4	3
Full Load Amps		A	1.75	1.75	2.70	1.75	2.70	1.75
Locked Rotor Amps		A	6.20	6.20	7.00	6.20	7.00	6.20
Motor Rating		kW	0.98	0.98	1.60	0.98	1.60	0.98
Compressor - Per Compressor								
Quantity			4	4	4	2 + 2	2 + 2	4
Motor Rating		kW	6.2	8.1	8.1	8.1 / 11.7	8.1 / 11.7	11.7
Nominal Run Amps	(1)	A	11.7	14.6	14.6	14.6 / 22.0	14.6 / 22.0	22.0
Sump Heater Rating		W	65.0	65.0	65.0	65.0 / 75.0	65.0 / 75.0	75.0
Start Amps	(2)		98.0	120.0	120.0	120.0/ 175.0	120.0/ 175.0	175.0
Type Of Start					Direct on line			
QUIET DQ			**UCC75DQ-2/1**	**UCC100DQ-3/1**	**UCC110DQ-4/2**	**UCC125DQ-3/1**	**UCC130DQ-4/2**	**UCC150DQ-4/1**
			All data as above except:					
Condenser Fan - Per Fan								
Quantity			2	3	4	3	4	4
Full Load Amps		A	1.15	1.15	1.25	1.15	1.25	1.15
Locked Rotor Amps		A	2.10	2.10	4.50	2.10	4.50	2.10
Motor Rating		kW	0.68	0.68	0.69	0.68	0.69	0.68
SUPER QUIET DSQ			**UCC75DSQ-2/1**	**UCC100DSQ-3/1**	**UCC110DSQ-4/2**	**UCC125DSQ-4/1**	**UCC130DSQ-6/2**	**UCC150DSQ-4/1**
			All data as above except:					
Condenser Fan - Per Fan								
Quantity			2	3	4	4	6	4
Full Load Amps		A	0.83	0.83	0.78	0.83	0.78	0.83
Locked Rotor Amps		A	1.50	1.50	1.50	1.50	1.50	1.50
Motor Rating		kW	0.32	0.32	0.48	0.32	0.48	0.32
OPTIONAL EXTRAS								
Power Factor Correction								
Nominal Run Amps	(1)	A	48	56	63	71	77	85
Maximum Start Amps	(2)	A	140	167	175	217	222	246
Recommended Mains Fuse		A	63	80	100	125	125	125
Compressor Nominal Run Amps - Per Compressor		A	4 x 11	4 x 13	4 x 13	2 x 20 / 2 x 13	2 x 20 / 2 x 13	4 x 20
Electronic Soft-start								
Nominal Run Amps	(1)	A	50	62	69	79	84	93
Maximum Start Amps	(2)	A	97	119	132	147	152	176
Recommended Mains Fuse		A	63	80	100	125	125	125
Single Head Pump (or Run/Standby)								
Unit Nominal Run Amps	(1)	A	55	67	75	83	90	98
Recommended Mains Fuse		A	80	100	100	125	125	160
Motor Rating		kW	2.2	2.2	3.0	2.2	3.0	2.2
Full Load Amps		A	4.8	4.8	6.1	4.8	6.1	4.8
Larger Single Head Pump (or Run/Standby)								
Unit Nominal Run Amps	(1)	A	57	69	77	85	92	100
Recommended Mains Fuse		A	80	100	100	125	125	160
Motor Rating		kW	3.0	3.0	4.0	3.0	4.0	3.0
Full Load Amps		A	6.8	6.8	7.7	6.8	7.7	6.8
Twin Head Pump								
Unit Nominal Run Amps	(1)	A	56	65	75	85	90	99
Recommended Mains Fuse		A	80	100	100	125	125	160
Motor Rating		kW	3.0	3.0	3.0	3.0	3.0	3.0
Full Load Amps		A	6.1	6.1	6.1	6.1	6.1	6.1
Larger Twin Head Pump								
Unit Nominal Run Amps	(1)	A	58	70	77	86	92	101
Recommended Mains Fuse		A	80	100	100	125	125	160
Motor Rating		kW	4.0	4.0	4.0	4.0	4.0	4.0
Full Load Amps		A	7.7	7.7	7.7	7.7	7.7	7.7

(1) Based at 12/7°C water and 30°C ambient
(2) Starting amps refers to the direct on line connections.

Installation Data

ELECTRICAL DATA			UCC160D-4/2	UCC180D-6/2	UCC200D-6/2	UCC225D-6/2	UCC250D-6/2	UCC275D-8/2
Unit Data								
Nominal Run Amps	(1)	A	99	115	127	137	149	160
Maximum Start Amps	(2)	A	252	281	342	373	386	440
Permanent Supply		VAC			230 V 1 PH 50 Hz			
Mains Supply		VAC			400 V 3 PH 50 Hz			
Rec Permanent Fuse Size		A	16	16	16	16	16	16
Rec Mains Fuse Size		A	125	160	160	200	200	200
Max Permanent Incoming Cable Size		mm²			4 mm² terminals			
Max Mains Incoming Cable Size		mm²			Direct to Bus Bar			
Control Circuit		VAC			24V/230V AC			
Evaporator								
Pad Heater Rating		W	100	100	100	100	100	100
External Trace Heating								
Available (fitted by others)		W	500	500	500	500	500	500
Condenser Fan - Per Fan								
Quantity			4	6	6	6	6	8
Full Load Amps		A	2.70	2.70	2.70	2.70	2.70	1.75
Locked Rotor Amps		A	7.00	7.00	7.00	7.00	7.00	6.20
Motor Rating		kW	1.60	1.60	1.60	1.60	1.60	0.98
Compressor - Per Compressor								
Quantity			4	2 + 2	2 + 2	2 + 2	4	2 + 2
Motor Rating		kW	11.7	15.0 / 11.7	18.2 / 11.7	18.2 / 15.0	18.2	22.8 / 18.2
Nominal Run Amps	(1)	A	22.0	27.0 / 22.0	33.0 / 22.0	33.0 / 27.0	33.0	40.0 / 33.0
Sump Heater Rating		W	75.0	130.0 / 75.0	130.0 / 75.0	130.0 / 130.0	130.0	130.0 / 130.0
Start Amps	(2)		175.0	215.0 / 175.0	270.0 / 175.0	270.0 / 215.0	270.0	320.0 / 270.0
Type Of Start					Direct on line			
QUIET DQ			**UCC160DQ-6/2**	**UCC180DQ-6/2**	**UCC200DQ-6/2**	**UCC225DQ-8/2**	**UCC250DQ-8/2**	**UCC275DQ-8/2**
			All data as above except:					
Condenser Fan - Per Fan								
Quantity			6	6	6	8	8	8
Full Load Amps		A	1.25	1.25	1.25	1.25	1.25	1.15
Locked Rotor Amps		A	4.50	4.50	4.50	4.50	4.50	2.10
Motor Rating		kW	0.69	0.69	0.69	0.69	0.69	0.70
SUPER QUIET DSQ			**UCC160DSQ-6/2**	**UCC180DSQ-6/2**	**UCC200DSQ-6/2**	**UCC225DSQ-8/2**	**UCC250DSQ-8/2**	**UCC275DSQ-10/2**
			All data as above except:					
Condenser Fan - Per Fan								
Quantity			6	6	6	8	8	10
Full Load Amps		A	0.78	0.78	0.78	0.78	0.78	0.83
Locked Rotor Amps		A	1.50	1.50	1.50	1.50	1.50	1.50
Motor Rating		kW	0.48	0.48	0.48	0.48	0.48	0.32
OPTIONAL EXTRAS								
Power Factor Correction								
Nominal Run Amps	(1)	A	91	105	117	125	137	146
Maximum Start Amps	(2)	A	252	281	342	373	386	430
Recommended Mains Fuse		A	125	125	160	160	200	200
Compressor Nominal Run Amps - Per Compressor		A	4 x 20	2 x 24/2 x 20	2 x 30/2 x 20	2 x 30/2 x 24	4 x 30	2 x 36 / 2 x 30
Electronic Soft-start								
Nominal Run Amps	(1)	A	99	115	127	137	149	160
Maximum Start Amps	(2)	A	182	198	234	239	278	302
Recommended Mains Fuse		A	125	160	160	200	200	200
Single Head Pump (or Run/Standby)								
Unit Nominal Run Amps	(1)	A	105	120	132	141	154	173
Recommended Mains Fuse		A	125	160	160	200	200	200
Motor Rating		kW	3.0	3.0	3.0	3.0	3.0	5.5
Full Load Amps		A	6.1	6.1	6.1	6.1	6.1	11.7
Larger Single Head Pump (or Run/Standby)								
Unit Nominal Run Amps	(1)	A	107	122	134	144	156	183
Recommended Mains Fuse		A	125	160	160	200	200	250
Motor Rating		kW	4.0	4.0	4.0	4.0	4.0	11.0
Full Load Amps		A	7.7	7.7	7.7	7.7	7.7	21.5
Twin Head Pump								
Unit Nominal Run Amps	(1)	A	107	122	134	144	156	171
Recommended Mains Fuse		A	125	160	160	200	200	200
Motor Rating		kW	4.0	4.0	4.0	4.0	4.0	5.5
Full Load Amps		A	7.7	7.7	7.7	7.7	7.7	11.7
Larger Twin Head Pump								
Unit Nominal Run Amps	(1)	A	110	125	137	147	159	183
Recommended Mains Fuse		A	125	160	160	200	200	250
Motor Rating		kW	5.5	5.5	5.5	5.5	5.5	11.0
Full Load Amps		A	11.1	11.1	11.1	11.1	11.1	21.5

(1) Based at 12/7°C water and 30°C ambient
(2) Starting amps refers to the direct on line connections.

Installation Data

ELECTRICAL DATA

			UCC300D-8/2	UCC330D-10/2	UCC360D-10/2	UCC400D-12/2	UCC450D-12/2
Unit Data							
Nominal Run Amps	(1)	A	173	198	216	240	260
Maximum Start Amps	(2)	A	454	435	453	520	540
Permanent Supply		VAC			230 V 1 PH 50 Hz		
Mains Supply		VAC			400 V 3 PH 50 Hz		
Rec Permanent Fuse Size		A	16	16	16	16	16
Rec Mains Fuse Size		A	200	250	315	315	355
Max Permanent Incoming Cable Size		mm²			4 mm² terminals		
Max Mains Incoming Cable Size		mm²			Direct to Bus Bar		
Control Circuit		VAC			24V/230V AC		
Evaporator							
Pad Heater Rating		W	100	100	100	100	100
External Trace Heating							
Available (fitted by others)		W	500	500	500	500	500
Condenser Fan - Per Fan							
Quantity			8	10	10	12	12
Full Load Amps		A	1.75	1.75	1.75	1.75	1.75
Locked Rotor Amps		A	6.20	6.20	6.20	6.20	6.20
Motor Rating		kW	0.98	0.98	0.98	0.98	0.98
Compressor - Per Compressor							
Quantity			4	3 + 3	6	3 + 3	6
Motor Rating		kW	22.8	18.2 / 15.0	18.2	22.8 / 18.2	22.8
Nominal Run Amps	(1)	A	40.0	33.0 / 27.0	33.0	40.0 / 33.0	40.0
Sump Heater Rating		W	130.0	130.0 / 130.0	130.0	130.0 / 130.0	130.0
Start Amps	(2)		320.0	270.0 / 215.0	270.0	320.0 / 270.0	320.0
Type Of Start					Direct on line		
QUIET DQ			**UCC300DQ-10/2**	**UCC330DQ-10/2**	**UCC360DQ-12/2**	**UCC400DQ-12/2**	**UCC450DQ-14/2**
			All data as above except:				
Condenser Fan - Per Fan							
Quantity			10	10	12	12	14
Full Load Amps		A	1.15	1.15	1.15	1.15	1.15
Locked Rotor Amps		A	2.10	2.10	2.10	2.10	2.10
Motor Rating		kW	0.70	0.70	0.70	0.70	0.70
SUPER QUIET DSQ			**UCC300DSQ-12/2**	**UCC330DSQ-14/2**	**UCC360DSQ-14/2**	**UCC400DSQ-16/2**	**UCC450DSQ-16/2**
			All data as above except:				
Condenser Fan - Per Fan							
Quantity			12	14	14	16	16
Full Load Amps		A	0.83	0.83	0.83	0.83	0.83
Locked Rotor Amps		A	1.50	1.50	1.50	1.50	1.50
Motor Rating		kW	0.32	0.32	0.32	0.32	0.32
OPTIONAL EXTRAS							
Power Factor Correction							
Nominal Run Amps	(1)	A	158	180	198	219	237
Maximum Start Amps	(2)	A	442	435	453	520	540
Recommended Mains Fuse		A	200	250	250	250	315
Compressor Nominal Run Amps - Per Compressor		A	4 x 36	3 x 30 / 3 x 24	6 x 30	3 x 36 / 3 x 30	6 x 36
Electronic Soft-start							
Nominal Run Amps	(1)	A	173	198	216	240	260
Maximum Start Amps	(2)	A	314	327	345	392	412
Recommended Mains Fuse		A	200	250	315	315	355
Single Head Pump (or Run/Standby)							
Unit Nominal Run Amps	(1)	A	189	210	228	252	272
Recommended Mains Fuse		A	250	250	315	315	355
Motor Rating		kW	5.5	7.5	7.5	7.5	7.5
Full Load Amps		A	11.7	15.2	15.2	15.2	15.2
Larger Single Head Pump (or Run/Standby)							
Unit Nominal Run Amps	(1)	A	197	220	238	261	282
Recommended Mains Fuse		A	250	315	315	315	355
Motor Rating		kW	11.0	11.0	11.0	11.0	11.0
Full Load Amps		A	21.5	21.5	21.5	21.5	21.5
Twin Head Pump							
Unit Nominal Run Amps	(1)	A	185	209	227	251	275
Recommended Mains Fuse		A	250	250	315	315	355
Motor Rating		kW	5.5	5.5	5.5	5.5	7.5
Full Load Amps		A	11.7	11.7	11.7	11.7	15.2
Larger Twin Head Pump							
Unit Nominal Run Amps	(1)	A	198	220	238	262	282
Recommended Mains Fuse		A	250	315	315	315	355
Motor Rating		kW	11.0	11.0	11.0	11.0	11.0
Full Load Amps		A	21.5	21.5	21.5	21.5	21.5

(1) Based at 12/7°C water and 30°C ambient
(2) Starting amps refers to the direct on line connections.

Controls

CONTROL SCHEME FEATURES

Airedale recognises that all chiller applications are different but fall mainly into 2 application categories; Variable Supply Temperature and Constant Supply Temperature.

The onboard microprocessor has the capability of satisfying either control requirement as illustrated below. Using the Airedale Variable Supply Temperature control scheme, energy savings are available when compared with previous schemes and that of the Constant Supply Temperature application.

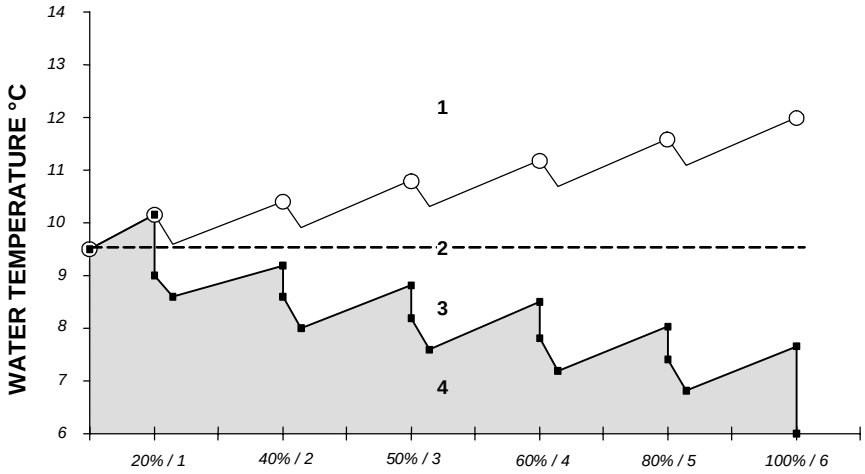
Variable Supply Temperature control schemes offer energy savings where the supply water temperature is not critical to its operation.

Selection of the best application control scheme can be made via a soft switch in the microprocessor during initial commissioning.

Examples based on Models UCC200D-6/2 having 6 Stages of Cooling

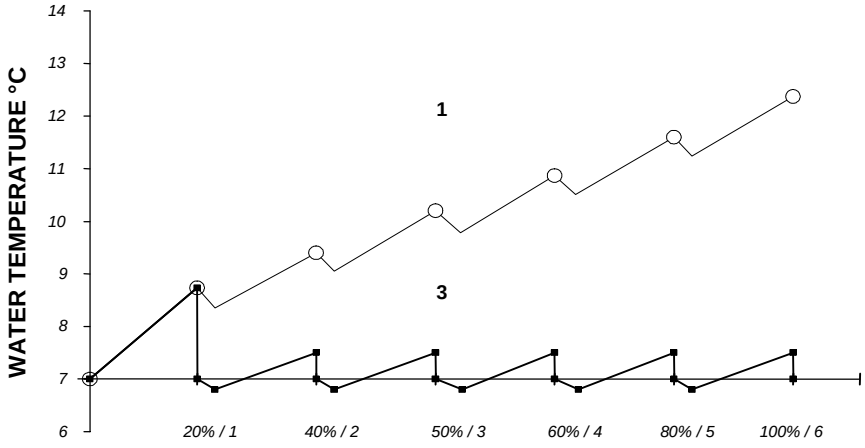
Key: 1 Return Water Temperature
2 Mean Value
3 Supply Water Temperature
4 Compressor Off

Variable Supply Temperature Control



CHILLER CAPACITY % / COOLING STAGE SEQUENCE

Constant Supply Temperature Control



CHILLER CAPACITY % / COOLING STAGE SEQUENCE

CAUTION **Factory set to Variable Supply Temperature Control unless otherwise stated at order.**

Only when the mode selection has been set can the unit be enabled.

AIRETronix Controls

CONTROLS

General Description

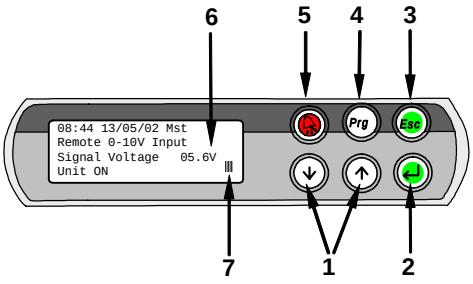
The AIRETronix microprocessor controller offers powerful analogue and digital control to meet a wide range of monitoring and control features including a real time clock and Industry standard communication port and network connections.

The controller's inbuilt display is used for viewing the unit operating status and making adjustments to control parameters by allowing the operator access to a series of display pages.

Also featured are a visual alarm and the facility to adjust and display control settings by local operator for information and control.

OPERATION

Standard Keypad /Display



1 UP/DOWN KEYS
To change Adjustable Fields & Scrolls up & down available Menus

2 ENTER
Selects Menus & Moves Cursor to Adjustable Fields Green LED

3 **ESC**
Green LED lit when **Operating Page** displayed, Returns to **Operating Page** Screen when pressed

4 **PROGRAM**
Opens the Available **Menus**

5 **ALARM**
Red LED Indicates Alarm Present

6 4 ROW LCD DISPLAY

7 **CURSOR (FLASHING)**: Top Left Position = **"HOME"** Indicates adjustable Fields

Navigation

The display is used for **Viewing Unit Operating Status** and **Adjusting Customer Control Settings** by allowing the operator access to a series of **Menus** & **sub-menus**. Viewing information is unrestricted, however set up and adjustment requires password entry, refer to ***Password Protection***.

Initially, use the Prg key to **access Menus,** the symbol ← will appear top right and the first menu will appear in CAPITALS, these **indicators** shows which menu is selected.

Use the ↓ ↑ keys to **move** the **indicator** ← to the desired menu and press ↵ to **open** the menu.

Use the ↵ key to **move** the flashing **cursor** ▮ to adjustable **fields** and the ↓ ↑ keys to change the values.

Press the ↵ key to **move** the **cursor** to the next **field** or **Home.**

When the cursor is **Home** either use the ↓ ↑ keys to scroll to next **sub-menu** or the Esc to **exit** and **return** to the **Standard Operating** page**.**

Standard Operating Page

The **Operating Page** will appear and remain present following start up of the controller as illustrated:

AIRETronix Controls

OPERATION (CONT..)

Standard Operating Page cont.

The following **Menus** can be accessed from the **Operating Page**, it is recommended that the display is always returned to the **Operating Page** by using the Esc key

Password Protection

To guard against unauthorised adjustments, a password is required to gain access to certain menus as defined below.

FACTORY SET PASSWORD PIN NUMBER: 4648 (or Customer chosen number).

When a password is requested use the ↓ ↑ keys to enter the number and ↵ to access the page.

Menus (Listed in Sequence)

Menu	Description	Password
Switch On/Off	Enable or Disable the unit	**Open Access**
Service	Allows selection of setpoint limits, enables unit on/off from display, remote on/off and remote pump on/off.	**Default 4648**
Setpoint	Allows setpoint adjustment, includes supply temperature setpoint and unit temperature differential.	**Default 4648**
Status	Displays current status on digital and analogue inputs and outputs.	**Open Access**
Maintenance	Displays hours run for compressors and pumps (if fitted). Also includes Electronic Expansion Valves (if fitted).	**Default 4648**
Clock	Allows adjustment of real time clock, time zones	**Default 4648**
Alarm Log	Display last 100 alarms in chronological order.	**Open Access**
Manufacturer	Factory use only.	**Airedale Only**

SETTING UP

Unit ON/OFF (Optional Extra)

By pressing the Esc and ↵ simultaneously for approximately 5 seconds, the unit operation will stop or start. The unit can also be enabled through the Switch On/Off menu.

Real Time Clock
(Optional to UCC30-80 Single Circuit Only)

The units leave the factory set, however follow the **Navigation** instructions if necessary.

Time Zones

The programme provides 3 On/Off periods per day, 7 days per week. The unit is factory set for continuous operation.

Technical Support

For further details, please contact Airedale.

VIEWING UNIT OPERATING STATUS

Status Menu

Allows access to view operating status of Digital and Analogue Inputs and Outputs.

Using the **Navigation** instructions, the following **Sub-Menus** shown in sequence can be accessed:

Single Circuit Units UCC30 - UCC80 (Ex 75)

Digital Inputs		**Digital Outputs**	
ID1	Compressor 1 Contactor Status	NO1	Compressor 1 Contactor
ID2	Compressor 2 Contactor Status	NO2	Compressor 2 Contactor
ID3	Evaporator Flow Switch	NO3	Pump 1 Contactor
ID4	Remote On/Off	NO4	Pump 2 Contactor
ID5	Pump 1 Contactor Status or Remote Pump Interlock	NO5	Alarm
ID6	Pump 2 Contactor Status		
Analogue Inputs		**Analogue Outputs**	
B1	Circuit 1 Liquid Pressure	Y1	Condenser Controller (Modulated Head Pressure Control)
B2	Circuit 1 Suction Pressure without EEV	Y2	Not Used
B3	Return Water Temperature	Y3	Not Used
B4	Supply Water Temperature	Y4	Not Used

AIRETronix Controls

VIEWING UNIT OPERATING STATUS

Dual Circuit Units UCC30 - UCC450

	Tandem Compressor Units	Trio Compressor Units
Digital Inputs		
ID1	Phase Rotation (Optional) or MCCB Status	Phase Rotation (Optional) or MCCB Status
ID2	Emergency Stop	Emergency Stop
ID3	Evaporator Flow Switch (Optional)	Evaporator Flow Switch (Optional)
ID4	Remote On/Off (Optional)	Remote On/Off (Optional)
ID5	Compressor 1 Contactor Status	Compressor 1 Contactor Status
ID6	Compressor 2 Contactor Status	Compressor 2 Contactor Status
ID7	Compressor 3 Contactor Status	Compressor 3 Contactor Status
ID8	Compressor 4 Contactor Status	Compressor 4 Contactor Status
ID9	Circuit 1 Low Pressure Switch	Circuit 1 Low Pressure Switch
ID10	Circuit 2 Low Pressure Switch	Circuit 2 Low Pressure Switch
ID11	Pump 1 Contactor Status or Remote Pump Interlock (Optional)	Pump 1 Contactor Status or Remote Pump Interlock (Optional)
ID12	Pump 2 Contactor Status (Optional)	Pump 2 Contactor Status (Optional)
ID13	Remote Pump On/Off (Optional)	Remote Pump On/Off (Optional)
ID14	Remote Summer/Winter Or Night Setback	Remote Summer/Winter Or Night Setback
ID15	Not Used	Not Used
ID16	Not Used	Not Used
ID17	Not Used	Compressor 5 Contactor Status
ID18	Not Used	Compressor 6 Contactor Status
Digital Outputs		
NO1	Compressor 1 Contactor	Compressor 1 Contactor
NO2	Compressor 2 Contactor	Compressor 2 Contactor
NO3	Pump 1 Contactor (Optional)	Compressor 3 Contactor
NO4	Compressor 3 Contactor	Compressor 4 Contactor
NO5	Compressor 4 Contactor	Compressor 5 Contactor
NO6	Pump 2 Contactor (Optional)	Compressor 6 Contactor
NO7-NO10	Not Used	Not Used
NO11	Evaporator Heater Pad	Evaporator Heater Pad
NO12	Alarm Circuit 1	Alarm Circuit 1
NO13	Alarm Circuit 2	Alarm Circuit 2
NO14-NO16	Not Used	Not Used
NO17	Not Used	Pump 1 Contactor
NO18	Not Used	Pump 2 Contactor
Analogue Inputs		
B1	Circuit 1 Liquid Pressure	Circuit 1 Liquid Pressure
B2	Circuit 2 Liquid Pressure	Circuit 2 Liquid Pressure
B3	Circuit 1 Suction Pressure without EEV or Leak Detector (Optional)	Circuit 1 Suction Pressure without EEV or Leak Detector (Optional)
B4	Return Water Temperature	Return Water Temperature
B5	Supply Water Temperature	Supply Water Temperature
B6	Circuit 1 Suction Pressure without EEV	Circuit 1 Suction Pressure without EEV
B7	Chilled Water Differential Pressure (Optional)	Chilled Water Differential Pressure (Optional)
B8	Remote Setpoint Adjustment (Optional)	Remote Setpoint Adjustment (Optional)
B9	Not Used	Evaporator Inlet Water
B10	Not Used	Ambient
Analogue Outputs		
Y1	Not Used	Not Used
Y2	Circuit 1 & 2 Condenser Fan Speed Controller (Modulated Head Pressure Control)	Circuit 1 & 2 Condenser Controller (Modulated Head Pressure Control)
Y3 - Y6	Not Used	Not Used
EVD Driver # Inputs		
B1	Circuit # Suction Temperature	
B2	Circuit # Suction Pressure	

AIRETronix Controls

ALARMS

The controller logs and allows viewing of the last 100 conditions recorded in descending chronological order.

1 Alarm Label
2 Alarm Status: Alarm Active or Alarm Cleared
3 Time of Alarm
4 The most current alarm (Code) Nos. 001 - 100
5 Date of Alarm

Alarm Handling

1 A **Red LED** behind the **Alarm** key will light in the event of an alarm. To view the alarms, simply press the key and the keys to scroll through.

2 Auto reset alarms will clear following this first depression of the **Alarm** key. If however the **Red LED** behind the **Alarm** key remains illuminated, the unit requires some form of manual reset.

3 For manual reset alarms, isolate the affected circuits before further investigation.

4 To reset or delete the alarms displayed in the alarm screen, simply press again.

COMMON ALARMS

Outlined below is a selection of Common Alarms, a full list is available, please contact Airedale.

Phase Rotation

A normally closed contact. When Phase Rotation is incorrect all controller outputs are de-activated.

Emergency Stop

A normally open contact. On closing, all controller outputs are de-activated.

Evaporator Flow Failure

A normally closed contact. On opening, all controller outputs are de-activated.

Low Supply Temperature

Supply Water Temperature Low Limit alarm is generated when the supply water temperature falls below the low limit value set. All controller outputs are de-activated.

INDIVIDUAL CIRCUIT ALARMS

Outlined below is a selection of Individual Circuit Alarms, a full list is available, please contact Airedale.

Electronic Expansion Valve Failure

This indicates that the electronic expansion valve controller has detected an operating problem.

Low Suction Pressure

When the suction pressure sensor value falls below the value set by the low suction level for a period exceeding 1 minute (or 3 minutes on compressor start-up), a visual alarm will be generated at the in-built display and the relevant compressor will be de-activated. On units with tandem compressors, both compressors from the same circuit will be switched off.

High Liquid Pressure

When the liquid pressure reaches 25 barg, the relevant circuit will be switched off and an alarm activated, this can only be rectified by manual reset via the microprocessor.

Compressor Status

A normally closed contact when the compressor is operating. If this contact remains open for a period of 3 seconds during operation of the compressor, a visual alarm is generated and the relevant compressor will be de-activated. This alarm comprises of compressor motor protection module, discharge gas thermostat and safety high pressure switch.

Commissioning Data

OPERATING LIMITS (For 100% Water)

Standard Unit	
Minimum Ambient Air DB °C	-5°C
Maximum Ambient Air DB °C	Refer to **Technical Manual - Performance Data - Capacity Data**
Minimum Leaving Water Temperature °C	+6°C
Maximum Return Water Temperature °C	+20°C

Unit with Electronic Fan Speed HP Control (-20°C)	
Minimum Ambient Air DB °C	-20°C
Maximum Ambient Air DB °C	Refer to **Technical Manual - Performance Data - Capacity Data**
Minimum Leaving Water Temperature °C	+6°C
Maximum Return Water Temperature °C	+20°C

1 Temperatures lower than those stated can be obtained with the addition of glycol.
2 For conditions outside those quoted, please refer to Airedale.

MECHANICAL DATA

Oil & Refrigerant Charges		UCC30SQ-1/1 UCC30DQ-1/1	UCC40SQ-1/1 UCC40DQ-1/1	UCC50SQ-2/1 UCC50DQ-2/1	UCC60SQ-2/1 UCC60DQ-2/1	UCC70SQ-2/1 UCC70DQ-2/1	UCC80SQ-2/1 UCC80DQ-2/1
Compressor		Single Circuit - Tandem Scroll / Double Circuit - 2 Single Scroll					
Quantity		2	2	2	2	2	2
Oil Charge Volume (Total)	l	1.5 + 1.5	1.6 + 1.6	1.9 + 1.9	3.0 + 1.9	3.0 + 3.0	3.6 + 3.6
Oil Type		Polyol Ester					
Refrigeration		Single Circuit / Double Circuit					
Refrigerant Control		Thermostatic Expansion Valve					
Refrigerant Precharged Charge (Total)	kg	R407C 5 + 5	6 + 6	6 + 6	8 + 8	8 + 8	10 + 10
SUPER QUIET SSQ		**UCC30SSQ-1/1 UCC30DSQ-1/1**	**UCC40SSQ-1/1 UCC40DSQ-1/1**	**UCC50SSQ-2/1 UCC50DSQ-2/1**	**UCC60SSQ-2/1 UCC60DSQ-2/1**	**UCC70SSQ-2/1 UCC70DSQ-2/1**	**UCC80SSQ-2/1 UCC80DSQ-2/1**
Refrigerant Charge (Total)	kg	5 + 5	6 + 6	6 + 6	8 + 8	8 + 8	10 + 10
Refrigeration Control		Thermostatic Expansion Valve					

		UCC75D-2/1	UCC100D-2/1	UCC110D-4/2	UCC125D-3/1	UCC130D-4/2	UCC150D-3/1
Compressor		Tandem Scroll					
Quantity		4	4	4	4	4	4
Oil Charge Volume (Total)	l	4 x 3.25	4 x 3.80	4 x 3.80	2 x 6.20+2 x 3.80	2 x 6.20+2 x 3.80	4 x 6.20
Oil Type		Polyol Ester					
Refrigeration		Dual Circuit					
Refrigerant Control		Thermostatic Expansion Valve					
Refrigerant Precharged Charge (Total)	kg	R407C 20 + 20	22 + 22	22 + 22	25 + 25	22 + 22	30 + 30
QUIET DQ		**UCC75DQ-2/1**	**UCC100DQ-3/1**	**UCC110DQ-4/2**	**UCC125DQ-3/1**	**UCC130DQ-4/2**	**UCC150DQ-4/1**
Refrigerant Charge (Total)	kg	20 + 20	25 + 25	22 + 22	30 + 30	22 + 22	40 + 40
Refrigeration Control		Electronic Expansion Valve					
SUPER QUIET DSQ		**UCC75DSQ-2/1**	**UCC100DSQ-3/1**	**UCC110DSQ-4/2**	**UCC125DSQ-4/1**	**UCC130DSQ-6/2**	**UCC150DSQ-4/1**
Refrigerant Charge (Total)	kg	20 + 20	23 + 23	22 + 22	40 + 40	30 + 30	40 + 40
Refrigeration Control		Electronic Expansion Valve					

		UCC160D-4/2	UCC180D-6/2	UCC200D-6/2	UCC225D-6/2	UCC250D-6/2	UCC275D-8/2
Compressor		Tandem Scroll					
Quantity		4	4	4	4	4	4
Oil Charge Volume (Total)	l	4 x 6.2	2 x 8.0 + 2 x 6.2	2 x 8.0 + 2 x 6.2	4 x 8.0	4 x 8.0	4 x 8.0
Oil Type		Polyol Ester					
Refrigeration		Dual Circuit					
Refrigerant Control		Thermostatic Expansion Valve (TEV)				Thermostatic (TEV)	Electronic Expansion Valve (EEV)
Refrigerant Precharged Charge (Total)	kg	R407C 20 + 20	R407C 30 + 30	R407C 30 + 30	R407C 30 + 30	R407C 30 + 30	R407C 41 + 41
QUIET DQ		**UCC160DQ-6/2**	**UCC180DQ-6/2**	**UCC200DQ-6/2**	**UCC225DQ-8/2**	**UCC250DQ-8/2**	**UCC275DQ-8/2**
Refrigerant Charge (Total)	kg	30 + 30	30 + 30	30 + 30	40 + 40	40 + 40	41 + 41
Refrigeration Control		Electronic Expansion Valve					
SUPER QUIET DSQ		**UCC160DSQ-6/2**	**UCC180DSQ-6/2**	**UCC200DSQ-6/2**	**UCC225DSQ-8/2**	**UCC250DSQ-8/2**	**UCC275DSQ-10/2**
		All data as D Model except:					
Refrigerant Charge (Total)	kg	30 + 30	30 + 30	30 + 30	40 + 40	40 + 40	50 + 50
Refrigeration Control		Electronic Expansion Valve					

		UCC300D-8/2	UCC330D-10/2	UCC360D-10/2	UCC400D-12/2	UCC450D-12/2
Compressor		Tandem Scroll	Trio Scroll			
Quantity		4	6	6	6	6
Oil Charge Volume (Total)	l	4 x 8.0	6 x 8.0	6 x 8.0	6 x 8.0	6 x 8.0
Oil Type		Polyol Ester				
Refrigeration		Dual Circuit				
Refrigerant Control		Electronic Expansion Valve (EEV)				
Refrigerant Precharged Charge (Total)	kg	R407C 42 + 42	R407C 43 + 39	R407C 53 + 53	R407C 65 + 60	R407C 63 + 63
QUIET DQ		**UCC300DQ-10/2**	**UCC330DQ-10/2**	**UCC360DQ-12/2**	**UCC400DQ-12/2**	**UCC450DQ-14/2**
Refrigerant Charge (Total)	kg	40 + 40	54 + 49	49 + 49	65 + 60	72 + 72
Refrigeration Control		Electronic Expansion Valve				
SUPER QUIET DSQ		**UCC300DSQ-12/2**	**UCC330DSQ-14/2**	**UCC360DSQ-14/2**	**UCC400DSQ-16/2**	**UCC450DSQ-16/2**
Refrigerant Charge (Total)	kg	46 + 46	56 + 51	70 + 70	82 + 76	80 + 80
Refrigeration Control		Electronic Expansion Valve				

Commissioning Data

WATERSIDE PRESSURE DROPS (1)

CAUTION **Constant water flow MUST be maintained. Variable water volume is NOT recommended and may invalidate warranty.**

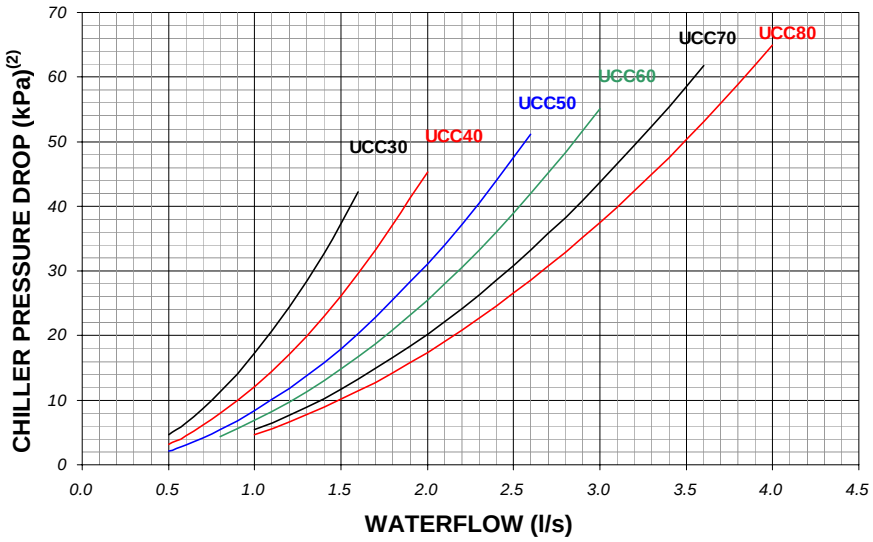
Use the formula below to calculate the External Head Available:

Total Pump Head Available	-	Chiller Pressure Drop	=	**External Head Available**

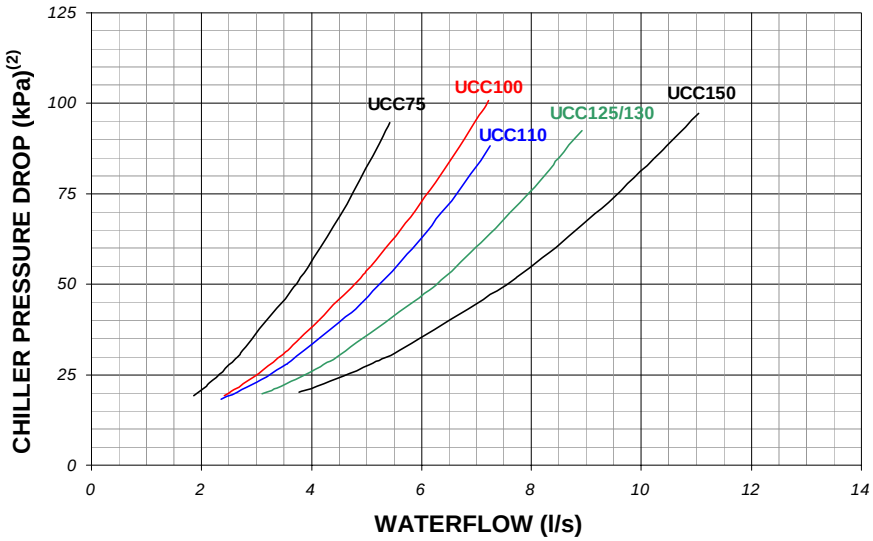
Example: UCC200D-6/2 9.54 l/s, standard single pump:

145 kPa	-	42 kPa	=	**103 kPa**

UCC30 – UCC80
(Except UCC75)



UCC75 - UCC150
(Except UCC80)



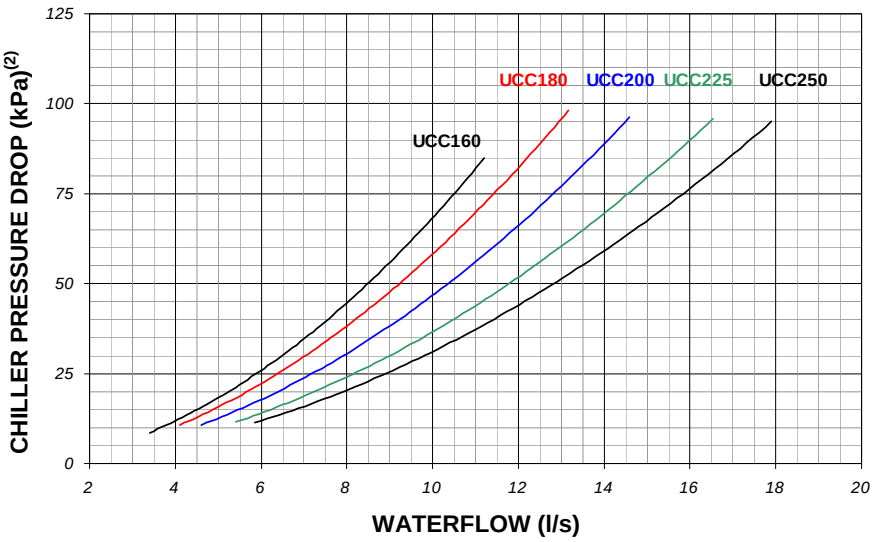
(1) For glycol solutions, please refer to ***Glycol Data***.
(2) Chiller pressure drop refers to standard unit without optional pumps and/or pipework.

Commissioning Data

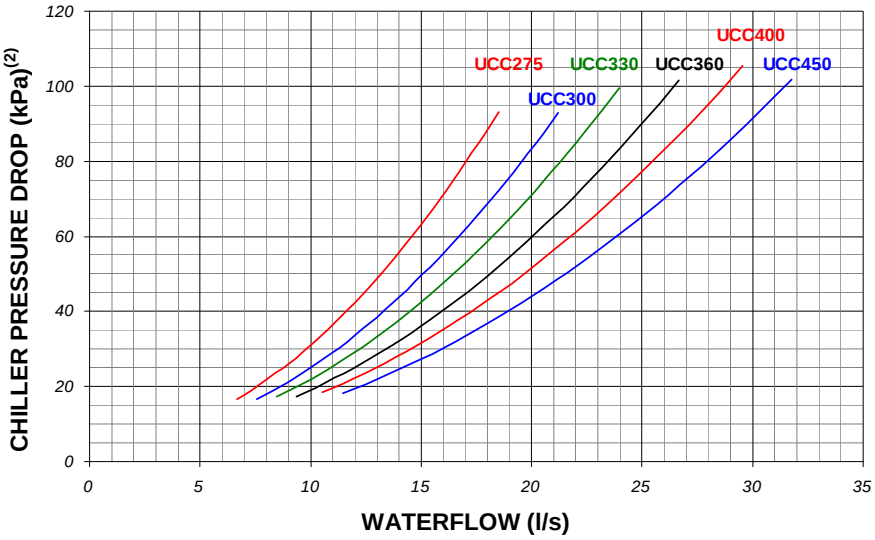
WATERSIDE PRESSURE DROPS (1)

CAUTION **Constant water flow MUST be maintained. Variable water volume is NOT recommended and may invalidate warranty.**

UCC160 - UCC250



UCC240 - UCC450

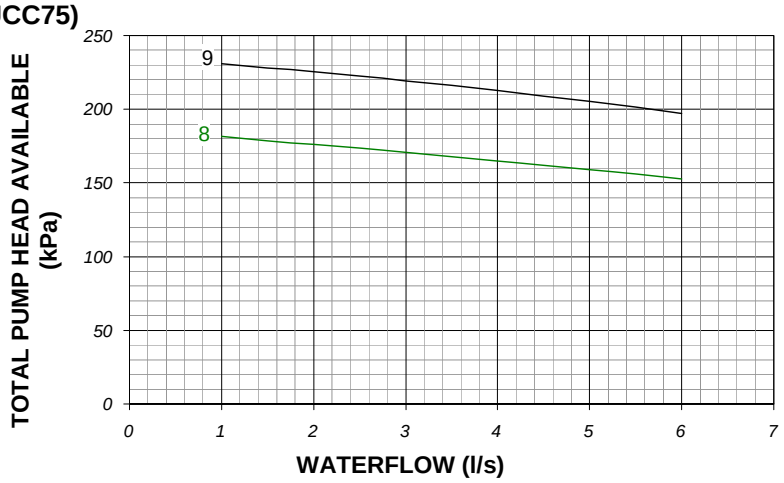


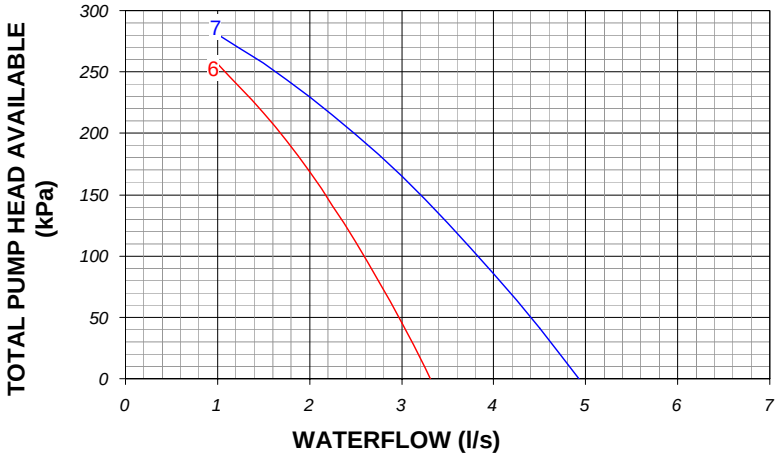
(1) For glycol solutions, please refer to ***Glycol Data***.
(2) Chiller pressure drop refers to standard unit without optional pumps and/or pipework.

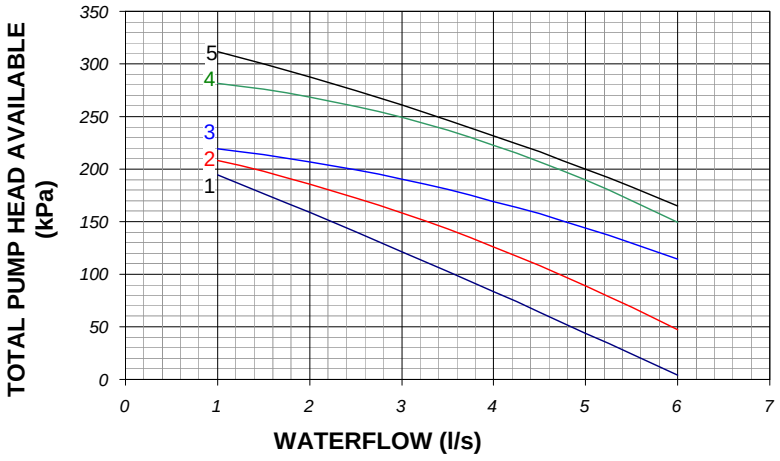
Commissioning Data

PUMP PACKAGES

UCC30 - UCC80 (Except UCC75)







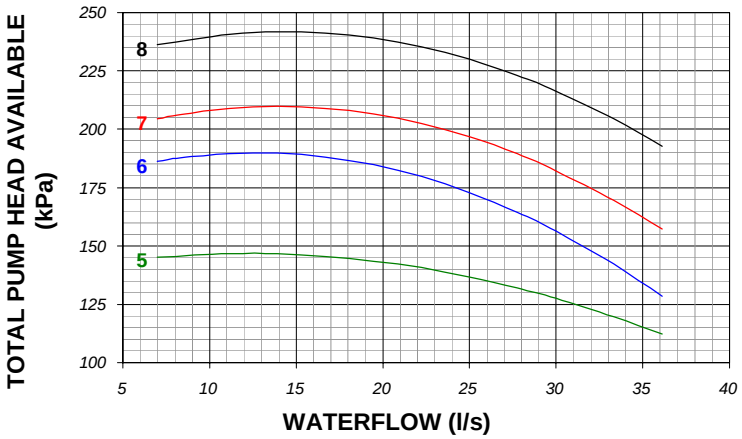
		Single Head Pump or Run / Standby Pump	
		Standard	Larger
UCC30	Curve	1	6
UCC40		1	7
UCC50 - UCC60		2	5
UCC70 - UCC80		3	4
		Twin Head Pump	
		Standard	Larger
UCC30 - UCC80	Curve	8	9

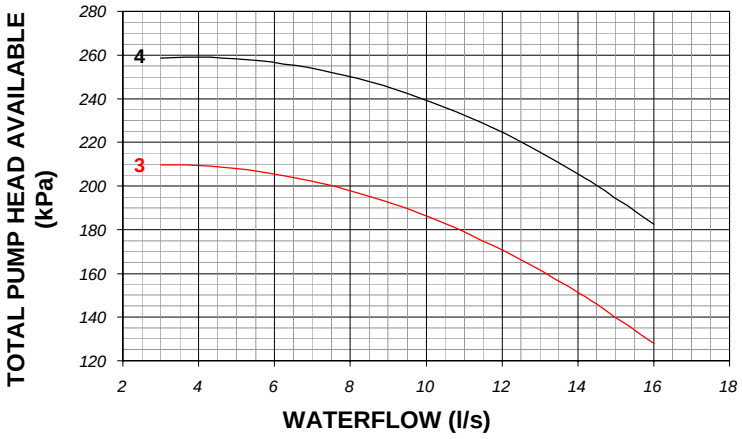
Commissioning Data

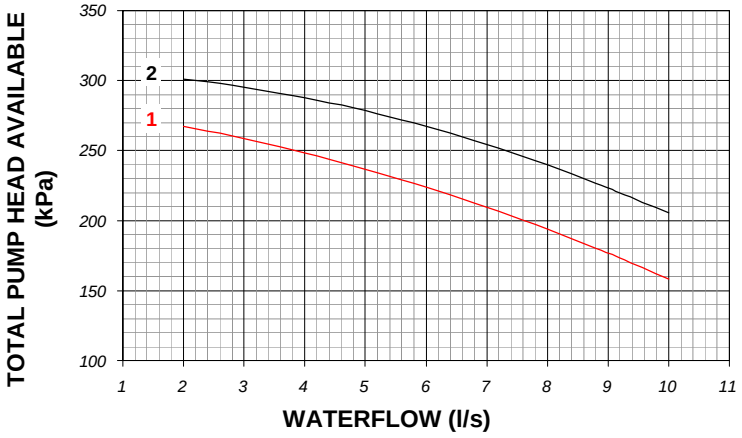
PUMP PACKAGES

UCC75 - UCC450 (Except UCC80)

Single Head Pump or Run/Standby







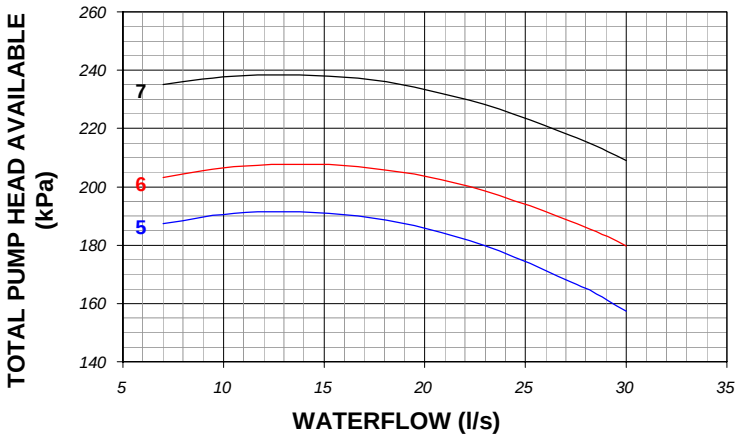
		Single Head Pump or Run / Standby Pump	
		Standard	Larger
UCC75 - 150 (Ex 80)		1	2
UCC110 - 250		3	4
UCC275 - 300	Curve	5	7
UCC330 - 400		6	7
UCC450		6	8

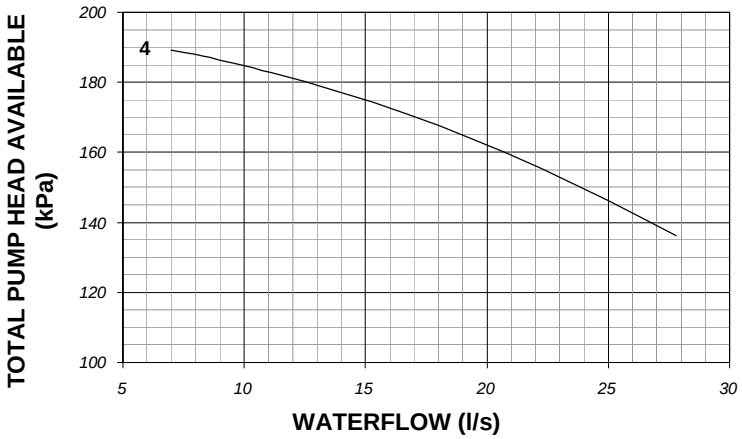
Commissioning Data

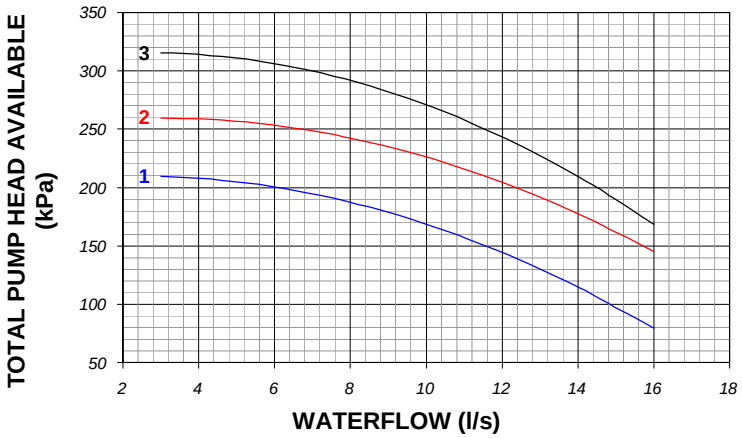
PUMP PACKAGES

UCC75 - UCC450 (Except UCC80)

Twin Head Pump







		Twin Head Pump	
		Standard	Larger
UCC75 - 130 (Ex 80)	Curve	1	2
UCC160 - 250		2	3
UCC275		4	5
UCC300 - 400		4	6
UCC450		5	7

Commissioning Data

OPERATIONAL SEQUENCE

Refrigerant Charge Check for the presence of a refrigerant charge in the condenser side.

Sump Heater The mains supply to the sump (oil) heater should be switched on at least 8 hours prior to compressor starting to avoid refrigerant migration.

CAUTION **A separately fused, locally isolated, permanent single phase and neutral supply MUST BE FITTED for the compressor sump heater, evaporator trace heating and control circuits, FAILURE to do so could INVALIDATE WARRANTY.**

Pre-Start-Up Check Before compressor start-up, make sure that an oil level is showing in the compressor sight glass, and that all refrigerant ball valves are opened.

CAUTION **Check phase rotation by connecting pressure gauges to the suction and discharge ports, if no differential pressure occurs, isolate immediately.**

Adding Refrigerant The unit is supplied with a full refrigerant charge, additional refrigerant should be added to the system via 1/4" schraeder connection on the expansion line if required.

Pump Down Never pump down without the low pressure trip and high discharge temperature switches being operative.

UNLOADING PROTECTION

Head Pressure The microprocessor has inbuilt protection against nuisance trips. If the head pressure rises above 24barg the system will unload 1 compressor and remain unloaded until the head pressure drops below 21barg.

Low Pressure If low pressure drops below the microprocessor setting, the compressor will unload to 1 compressor, if low pressure persists for 1 minute, the circuit will be switched off and sound an alarm.

Commissioning Procedure

GENERAL

To be read in conjunction with the commissioning sheets provided, items highlighted should be recorded.

CAUTION **Please ensure all documents have been completed correctly and return to Airedale Technical Support immediately to validate warranty.**

PRE COMMISSIONING CHECKLIST

CAUTION **ALL work MUST be carried out by Technically Trained competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work.

The door interlocking MCCB should be in the OFF position and the auxiliary alarm contact from the MCCB should be linked out.

Ensure all items listed in the Pre commissioning section are complete.

RECORD

The unit should be visually inspected and any damage noted.

- Secure commissioning gauges to the high side of the system, check for a positive charge.
- Check tightness of electrical components.
- Check that the remote on/off switch (if fitted) is in the off position.
- With the MCBs in the off position measure the incoming voltage.
- Check Phase Rotation.
- Check voltage at permanent supply.
- Measure and record the primary (230V) and secondary (24V) voltages at each of the transformers, adjust tapping if necessary and record on the commissioning document.
- Check all timer settings are correct.
- Check Sump Heater (ensure this is switched on for a minimum of 8 hours prior to the unit operation).
- Check oil level of each compressor.
- Check water filter is fitted.
- Check design water flow is available.
- Check flow switch and pump interlocks are fitted to the water system and wired directly to the chiller.
- Switch on the controls and individual circuits, primary and secondary, MCBs to the ON position. At this stage the control display panel should be illuminated.
- Record Optional Extras.
- Record Controller Data.

CAUTION **Disable remote ON/OFF to ensure the unit does not start unintentionally.**

The chiller will not start until microprocessor control SWITCH 1 is in the ON position. DO NOT SWITCH TO ON AT THIS STAGE

- Adjust the water temperature supply and return set points (if necessary) to call for 100% cooling (refer to the ***Controls*** section).
- Ensure all KNOBS and SWITCHES are adjusted to suit the design requirements (refer to the ***Controls*** section).

To switch the unit ON, use the microprocessor keypad as follows:

Press (Prg), press (↵), press (↵), press (↑) & finally (↵).

CAUTION **There will always be a delay between the enabling of the unit and the energising of the compressor contactors, anything between 1 to 2 minutes. Be patient.**

Commissioning Procedure

PRE COMMISSIONING CHECKLIST

- Check that each circuit trips on low pressure. The alarm should appear within 3 minutes.
- The alarm will be recognised at the display circuit trip, to clear the alarms refer to ***Alarm Handling***.

CAUTION **Prior to the chiller compressors being allowed to start, the Water Flow Fail and Pump Interlock features MUST both be proven to work correctly.**

- To check the water flow fail safety protection is working satisfactorily:

RECORD Reduce the flow rate to 75% of design and ensure that the evaporator pressure or flow protection switch trips at this flow rate, adjust as necessary.

With compressors off, ensure this alarm is recognised as "**Water Flow Fail**" at the display and disengages the circuits operation immediately. Restore flow rate to the design and check the alarm has self-cleared.

- To check the pump interlock safety feature works satisfactorily:

RECORD Switch off the chiller water pump and check the interlock wiring connections at the chiller are open circuit.

To switch the unit OFF, use the microprocessor keypad as follows:

Press Prg, press ↵, press ↵, press ↑ & finally ↵.

Fully open all liquid line and discharge service ball valves on each circuit.

Commissioning Procedure

COMMISSIONING CHECKLIST

The following should be carried out with a load on the system, otherwise the unit is likely to short cycle. The following tests are to be carried out on 1 circuit at a time.

- Switch the door interlocking MCCB to the ON position but again only on the circuit which is to be tested.
- Adjust the water temperature supply and return set points to match the system requirements.

To switch the unit ON, use the microprocessor keypad as follows:

Press Prg, press ↵, press ↵, press ↑ & finally ↵.

- Check pressures at suction and discharge ports for correct phase rotation.

CAUTION **If no differential pressure occurs, isolate immediately.**

RECORD

- Measure and record the compressor amps once the compressors are fully loaded and then at each of the unloading stage.
- Measure and record full speed amps of each condenser.

CAUTION **The microprocessor LP setting is adjustable via the micro display. It is recommended that this setting be 0.4Bar below the equipment freezing point of the cooling medium ie for water (no glycol) LP micro settings is 3.2barg.**

- Ensure that the low water temperature safety cuts out at the correct setting +/- 0.5°C, to clear the alarms refer to ***Alarm Handling*** section.
- For water (no glycol) application, the recommended setting is 3°C below the design supply water temperature (to a minimum of 3°C).

RECORD

- Check the liquid line sight glass is clear and dry.
- Check the superheat setting adjusts the expansion valve to maintain a superheat setting of 5 – 8°C at all operating loads.
- Check and record the following:
  Suction and discharge pressures
  Liquid, discharge and suction line temperature
  Water inlet and outlet temperature
- Ensure the above are all within the design parameters.
- Repeat as follows for each circuit:
- **To switch the unit OFF,** use the microprocessor keypad as follows:
  Press Prg, press ↵, press ↵, press ↑ & finally ↵.
- **To switch the unit ON**, repeat above.

The unit is now commissioned and will provide many years of trouble free operation providing the following maintenance schedule is followed.

Maintenance

CAUTION **ALL work MUST be carried out by Technically Trained competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work.

IMPORTANT **UK MAINLAND - The Chiller Maintenance Record and supporting maintenance documents MUST be complete and available on request to validate warranty.**

The Chiller Maintenance Record is located within the unit control panel.

GENERAL MAINTENANCE

The maintenance schedule indicates the time period between maintenance operations.

3 MONTHS	ACTION	NOTES
REFRIGERATION	Check the following and compare results with commissioning records. • Suction and discharge readings. • Head pressure control is maintained. • Pressure relief indicator gauge. • Check each circuit sight glass for dryness and bubbles for indication of leaks. • Check compressor oil level and shell/sump temperature. • Visually inspect the unit for oil patches.	Investigate and rectify variations. **Remember to re-cap the Schraeder connections!** Investigate and repair possible leaks.
SYSTEM	Check the following against the commissioning records. • Control settings. • Alarm log for unusual occurrences. • Chilled water control maintains design temperature. • Chilled water flow is within design limits of zero to plus 10%. • Concurrently ensure chilled water pump and flow switch operate efficiently, and that interlocks function correctly. • Operation of waterflow switch and pump interlock.	Investigate and adjust as necessary.
Finally!	Record operating conditions.	
FABRIC	Visually inspect the unit for general wear and tear, treat metalwork.	Rust should be inhibited, primed and touched up with matching paint (available from Airedale or your Distributor).
	Visually inspect pipe and pipework insulation.	Repair/rectify as necessary.
	Clean evaporator water strainer.	At first maintenance visit and then as frequently as necessary (12 months).
	Clean condenser coils. **Do not steam clean** use detergent and stiff bristled brush. For heavy dirt, use either a high pressure water or chemical hose.	Do not damage fins and comb out if necessary.
	Visually check the following: • Pipework clamps are secure. • Tightness and condition of fan and compressor mounts. • Anti-Vibration mounts fixings (if fitted).	Secure/tighten as necessary.
Finally!	Ensure control panel lids and access panels have been correctly replaced and securely fastened in position.	

Maintenance

GENERAL MAINTENANCE

6 MONTHS	ACTION	NOTES
	Repeat 3 month checks plus the following:	
SYSTEM	Check evaporator trace heating and low ambient thermostat are set to activate at 4.0ºC.	**Remember to re-cap the Schraeder connections!**
12 MONTHS	**ACTION**	**NOTES**
	Repeat 6 month checks plus the following:	
SYSTEM	Check safety devices cut out the compressor at the correct settings.	
REFRIGERATION	Check glycol concentration if appropriate.	Adjust as necessary.
	Leak test all R407C joints and inspect all water connections.	Rectify as necessary.
	Check superheats with chiller running on full load (the height of summer is recommended). Recheck the charge following major adjustment of the superheats.	Adjust as necessary. A period of 30 minutes should be allowed between each resetting of the valve to allow pressures to stabilise. Thermostatic expansion valve only.
ELECTRICAL	Tighten all electrical terminals.	

COMPRESSOR MAINTENANCE

Periodic maintenance and inspection of this equipment is necessary to prevent premature failure, the following periodic inspections should be carried out by period or hourly use which ever is sooner.

1 Year	Measure compressor motor insulation.
7,500 Hours or 4 Years	Inspect compressor oil.

SHUT DOWN PERIODS

For periods of winter shut down the following precautions are recommended:

- Close the liquid and discharge ball valve
- Cap service ports
- Turn off electrical circuits
- Drain the water from the chiller evaporator via the evaporator drain plug

Parts Identification

SPARES

For ease of identification when ordering spares or contacting Airedale about your unit, please quote the unit type, unit serial number and the date of manufacture, which can be found on the unit serial plate.

A spares list for 1, 3 and 5 years will be supplied with every unit and is also available from our Spares department on request.

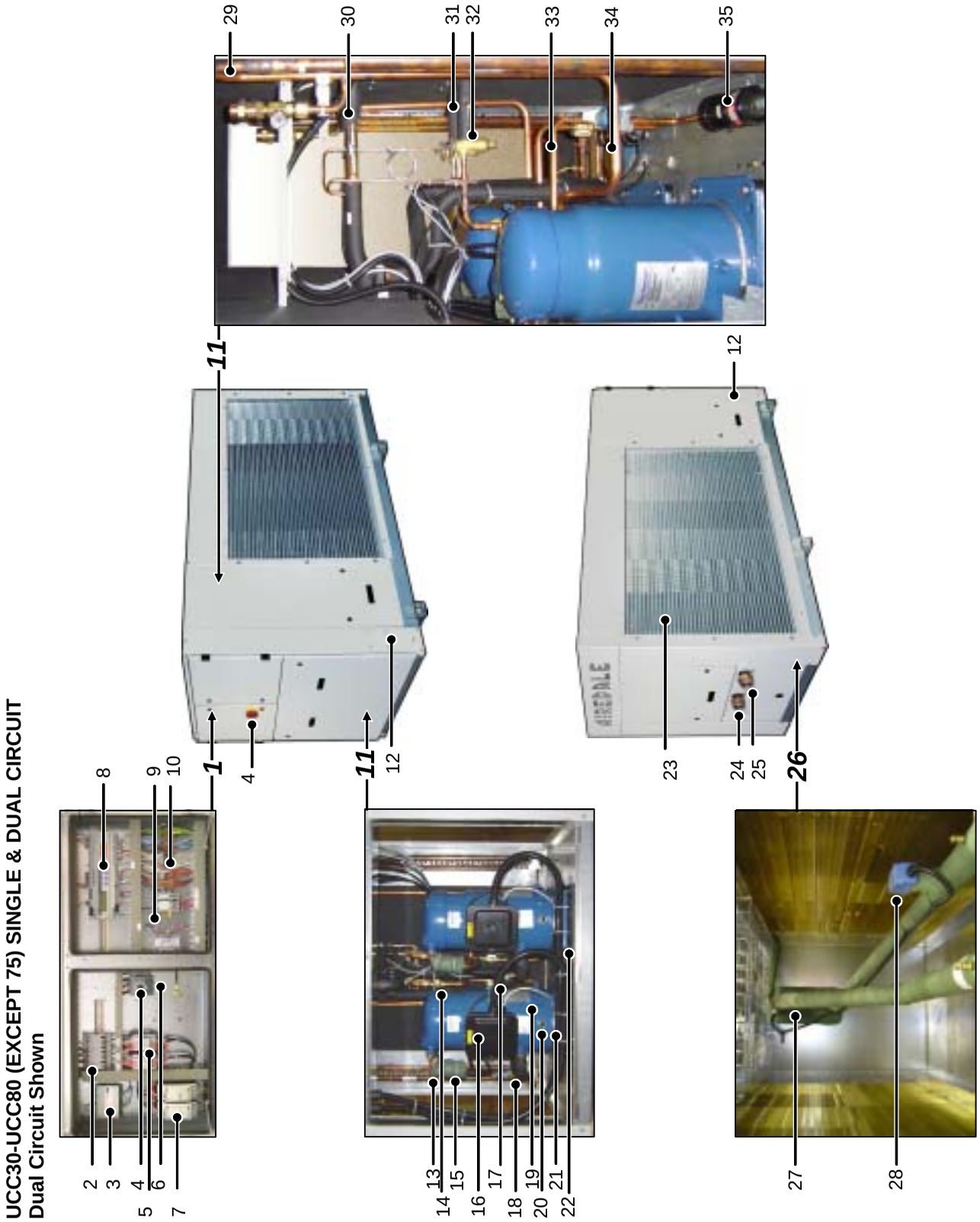
The serial plate can be located inside Item 1.

UK MAINLAND - Chiller Maintenance Record can be located inside Item 1.

UCC30-UCC80 (EXCEPT 75) SINGLE & DUAL CIRCUIT
Dual Circuit Shown

1 Electrical Panel (Mains & Controls)
2 Compressors MCBs
3 Modulating Head Pressure Controller
4 Door Interlocking isolator
5 Fan Contactor MPCB
6 Incoming Customer Mains 3 Phase
7 Compressor Contactors
8 Microprocessor Controller
9 EMC Filter
10 Customer Permanent Supply/Controls Connections
11 Compressor Compartment
12 Incoming Customer Mains Access Points
13 HP Switch
14 Liquid Line Sight Glass
15 Discharge Thermostat Switch
16 Compressor Electrical Terminal Box
17 Suction Pressure Transducer & Low Pressure Switch
18 Suction Port
19 Oil Sump Draw Point
20 Oil Level Sight Glass
21 Sump Heater
22 Compressor Feet/Resilient Mounts
23 Condenser Coils
24 Water Inlet Female BSP Connection
25 Water Outlet Female BSP Connection
26 Evaporator & Optional Pump Compartment
27 Evaporator
28 Flow Switch (Optional Extra)
29 Discharge Schraeder Connection
30 Water Inlet Sensor (Inside plate heat exchanger)
31 Water Outlet Sensor (Inside plate heat exchanger)
32 Electronic Expansion Valve or Thermostatic Expansion Valve
33 Liquid Line
34 Discharge Line Ball Valve (Optional)
35 Liquid Line Filter Drier

Parts Identification



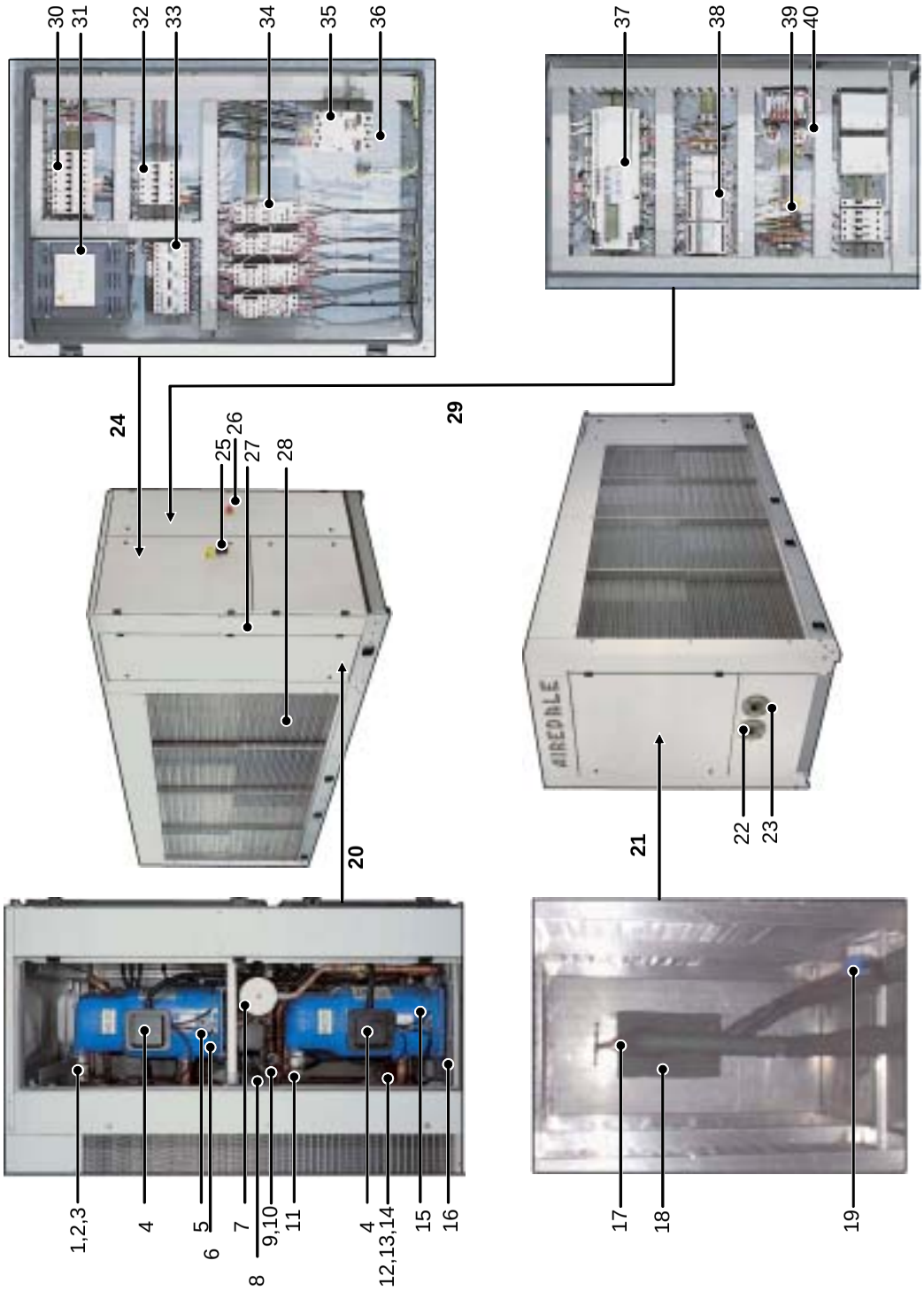
The serial plate can be located inside Item 24.

UK MAINLAND - Chiller Maintenance Record can be located inside Item 24.

UCC .. /1 – DUAL CIRCUIT

1 Discharge Line Ball Valve
2 Discharge Schraeder Connection
3 HP Switch
4 Compressor Electrical Terminal Box
5 Oil Level Sight Glass
6 Sump Heater
7 Liquid Line Filter Drier
8 Electronic Expansion Valve (Optional Extras on D Models)
9 Liquid Line Sight Glass
10 Liquid Line
11 Discharge Thermostat Switch
12 Low Pressure Switch
13 Suction Pressure Transducer
14 Suction Port
15 Oil Sump Draw Point
16 Compressor Feet/Resilient Mounts
17 Water Inlet Sensor
18 Evaporator
19 Flow Switch (Optional Extra)
20 Compressor Compartment
21 Evaporator & Optional Pump Compartment
22 Water Inlet Flange Connection
23 Water Outlet Flange Connection
24 Mains Panel
25 Door Interlocking isolator
26 Emergency Stop
27 Incoming Customer Mains Access Points
28 Condenser Coils
29 Unit Controller Panel
30 Fan Contactor MPCB
31 Modulating Head Pressure Controller
32 Compressors MCBs
33 Condenser Fan MPCB
34 Compressor Contactors
35 Isolator
36 Incoming Customer Mains 3 Phase
37 Microprocessor Controller
38 Electronic Expansion Valve Controller (Optional Extra on D Models)
39 Customer Permanent Supply/Controls Connections
40 EMC Filter

Parts Identification



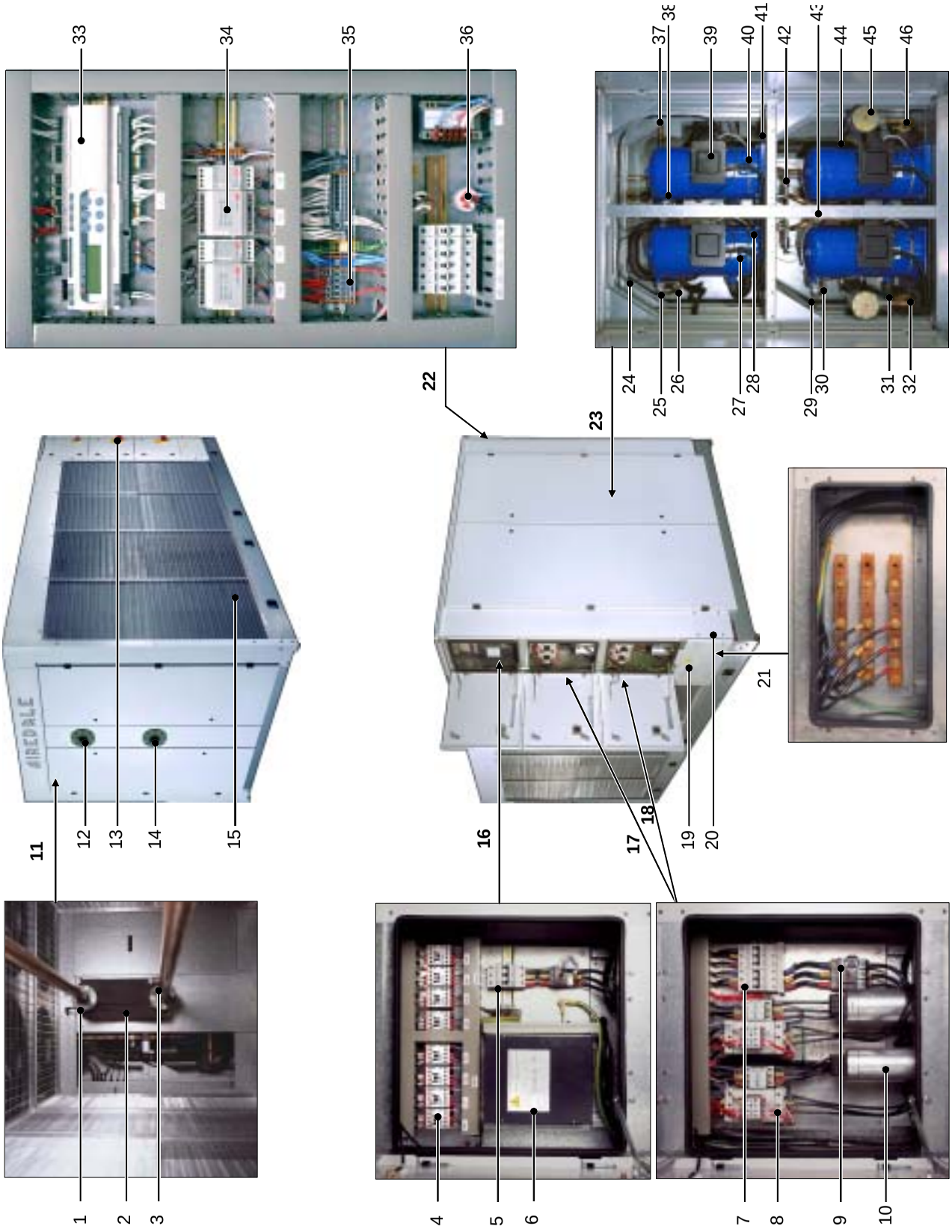
The serial plate can be located inside Item 22.

UK MAINLAND - Chiller Maintenance Record can be located inside Item 22.

UCC .. /2 – DUAL CIRCUIT

1 Water Inlet Sensor
2 Evaporator
3 Flow Switch (Optional Extra)
4 Condenser Fan Contactors
5 Fan Contactor MCB
6 Modulating Head Pressure Controller
7 Compressors MCBs
8 Compressor Contactors
9 Isolator
10 Power Factor Correction (Optional Extra)
11 Evaporator & Optional Pump Compartment
12 Water Inlet Flange Connection
13 Door Interlocking isolator (x 3)
14 Water Outlet Flange Connection
15 Condenser Coils
16 Condenser Fan Mains Panel
17 Mains Panel Circuit 1
18 Mains Panel Circuit 2
19 Bus bar Chamber
20 Incoming Customer Mains Access Points
21 Incoming Customer Mains 3 Phase
22 Unit Controller Panel (Including Serial Plate)
23 Compressor Compartment
24 Discharge Line Ball Valve
25 Low Pressure Switch
26 Suction Pressure Transducer
27 Oil Level Sight Glass
28 Oil Sump Draw Point
29 Discharge Thermostat Switch
30 Discharge Line
31 Suction Port
32 Liquid Line
33 Microprocessor Controller
34 Electronic Expansion Valve Controller (Optional Extra on D Models)
35 Customer Permanent Supply/Controls Connections
36 EMC Filter
37 Discharge Schraeder Connection
38 HP Switch
39 Compressor Electrical Terminal Box
40 Sump Heater
41 Compressor Feet/Resilient Mounts
42 Electronic Expansion Valve (Optional Extras on D Models)
43 Liquid Line Sight Glass
44 Liquid Line Solenoid Valve (D Models Only)
45 Liquid Line Filter Drier
46 Liquid Line Ball Valve

Parts Identification



Head Office:

Airedale International Air Conditioning Ltd
Leeds Road
Rawdon
Leeds LS19 6JY
United Kingdom

Tel: +44 (0) 113 239 1000
Fax: +44 (0) 113 250 7219

e-mail: ***enquiries@airedale.com***
website: ***www.airedale.com***

A MODINE Company

PART NO:	ISSUE	DATE
903-129 IM E	~~A~~	~~01/10/04~~
	~~B~~	~~01/02/05~~
	C	01/11/05

Airedale Departmental Contact Details:

CUSTOMER SERVICES For further assistance, please e-mail: ***enquiries@airedale.com*** or telephone:

UK Sales Enquiries	+ 44 (0) 113 238 7789	***uk.sales@airedale.com***
International Enquiries	+ 44 (0) 113 239 1000	***enquiries@airedale.com***
Spares Hot Line	+ 44 (0) 113 238 7878	***spares@airedale.com***
Airedale Service	+ 44 (0) 113 239 1000	***service@airedale.com***
Technical Support	+ 44 (0) 113 239 1000	***tech.support@airedale.com***
Training Enquiries	+ 44 (0) 113 239 1000	***marketing@airedale.com***

For information, visit us at our Web Site: ***www.airedale.com***